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DEPARTMENT OF PARKS AND RECREATION

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December 31, 2007

To Whom It May Concern:

DRAFT OTAY RANCH LONG-TERM IMPLEMETATION PROGRAM PUBLIC REVIEW

The County of San Diego Department of Parks and Recreation (DPR) is pleased to announce the availability of the Draft Long-Term Implementation Program (Program) for the Otay Ranch Preserve for review and comment. The document can be accessed on the Otay Ranch page of the Multiple Species Conservation Program website at http://www.mscp-sandiego.org/or.html under Current Projects.

The 23,000-acre Otay Ranch is located in southwestern San Diego County approximately 3.5 miles east of downtown Chula Vista and 14 miles southeast of downtown San Diego. A portion of the project is located in the City of Chula Vista and a portion in unincorporated San Diego County.

This Program implements the adopted monitoring and maintenance requirements included in the Otay Ranch General Development Plan/Subregional Plan, Phases 1 and 2 Resource Management Plans (RMPs), and Phase 2 RMP Appendices. It fulfills the requirement that the Otay Ranch Preserve Owner/Manager (POM) develop a plan to monitor and maintain the Otay Ranch Preserve. It should be noted that this Program will not be officially adopted until Phase 2 RMP is adopted in its entirety by the County of San Diego Board of Supervisors in 2008. At that time it is expected that Otay Ranch graphics will be updated to reflect current designations and ownerships.

If you have any questions, please contact Maeve Hanley, Group Program Manager, at (858) 966-1371. Please send your comments to the attention of Maeve Hanley, via mail at 9150 Chesapeake Drive, Suite 200, San Diego, CA 92123, via fax to (858) 495-5841, or via e-mail to maeve.hanley@sdcounty.ca.gov by **February 4, 2008**.

Sincerely,

RENÉE E. BAHL
Director, Department of Parks and Recreation

PARKS AND RECREATION
COUNTY OF SAN DIEGO
Where having fun is natural.

DRAFT

Otay Ranch Long-Term Implementation Program

December 31, 2007

Prepared by:
County of San Diego, Department of Parks and Recreation
City of Chula Vista, Planning Department

Approved by:

_____ _____

Supervisor Greg Cox, District 1 Date
County of San Diego

_____ _____

Deputy Mayor Jerry Rindone Date
City of Chula Vista

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I. INTRODUCTION

A. Purpose

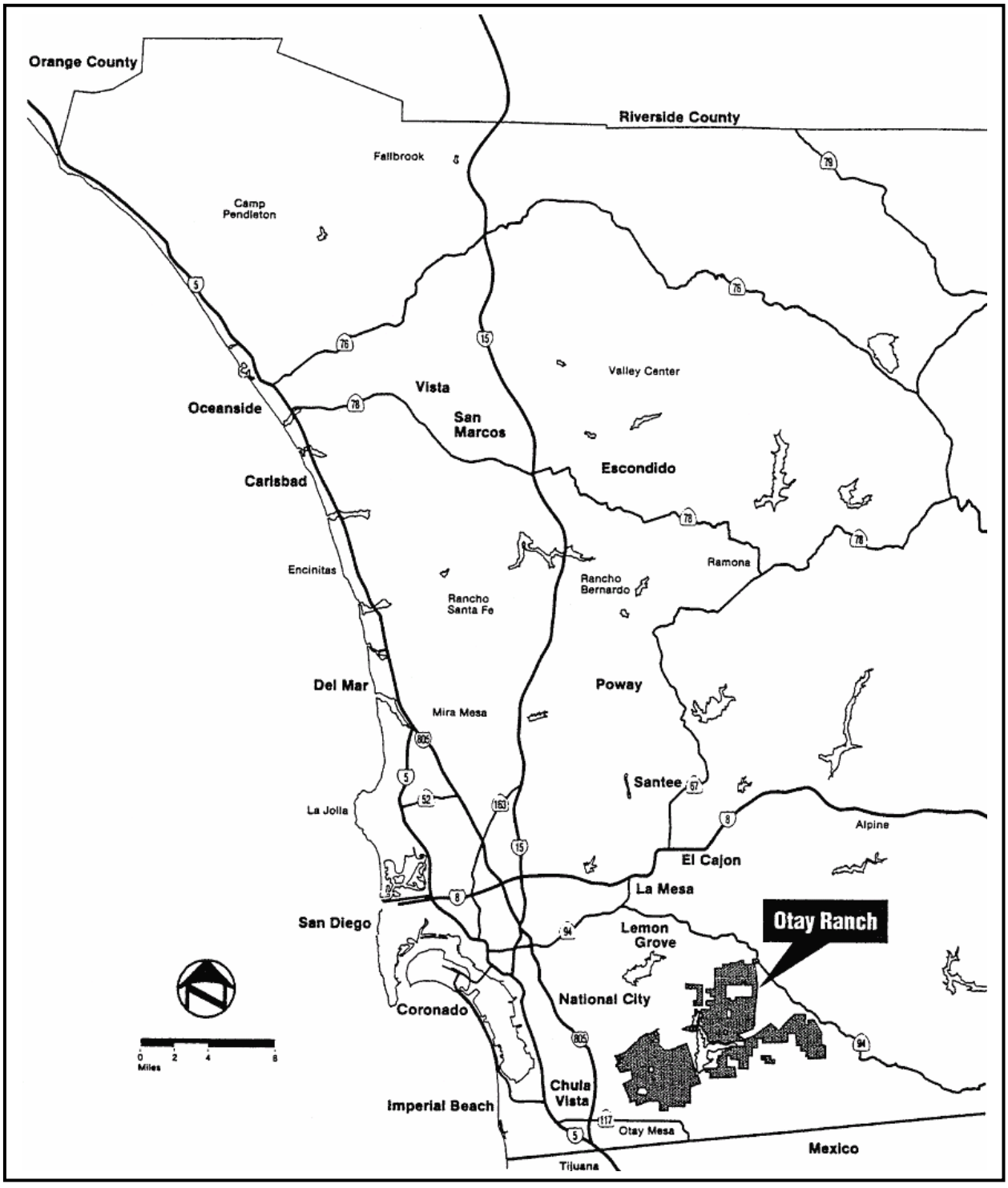
This document implements the adopted monitoring and maintenance requirements included in the Otay Ranch General Development Plan/Subregional Plan, Phases 1 and 2 Resource Management Plans (RMPs), and Phase 2 RMP Appendices. It fulfills the requirement that the Otay Ranch Preserve Owner/Manager (POM) develop a plan to monitor and maintain the Otay Ranch Preserve (Preserve).

B. Otay Ranch Background

The 23,000-acre Otay Ranch is located in southwestern San Diego County approximately 3.5 miles east of downtown Chula Vista and 14 miles southeast of downtown San Diego. (*Figure 1*). A portion of the project is located in the City of Chula Vista (City) and a portion in unincorporated San Diego County.

In 1989, the County of San Diego (County) and the City entered into a memorandum of understanding to jointly process a General Plan Amendment (GPA) and General Development Plan/Subregional Plan (GDP/SRP) for the overall Otay Ranch property. The GDP/SRP is an integrated document which combines the development requirements of the County and City. The GDP/SRP identifies Otay Ranch land uses, capital facility, environmental, economic and social goals, objectives and policies. The joint planning efforts also allowed for the comprehensive planning for the protection of open space, sensitive natural and cultural resources, and regional recreation opportunities. The RMPs respond to joint County/City intent with respect to open space planning and resource protection.

Figure 1 ***Regional Map***



B.1 Otay Ranch General Development Plan/Subregional Plan

The County Board of Supervisors (Board) and the Chula Vista City Council (City Council) adopted the Otay Ranch GDP/SRP on October 28, 1993 which contains major policies, recommendations, and implementation measures guiding development of the Otay Ranch project including Volume 2 of the Otay Ranch SRP and Phase 1 Resource Management Plan (RMP). On March 6, 1996, the Board adopted portions of Phase 2 RMP including the Otay Ranch Preserve Financing Plan and the Preserve Conveyance Plan which set forth the processing for conveying preserve lands associated with Otay Ranch SPA One only. The City Council adopted Phase 2 RMP in its entirety on June 4, 1996. Many of these policies, recommendations and implementation measures require continued coordination between the County and the City[1].

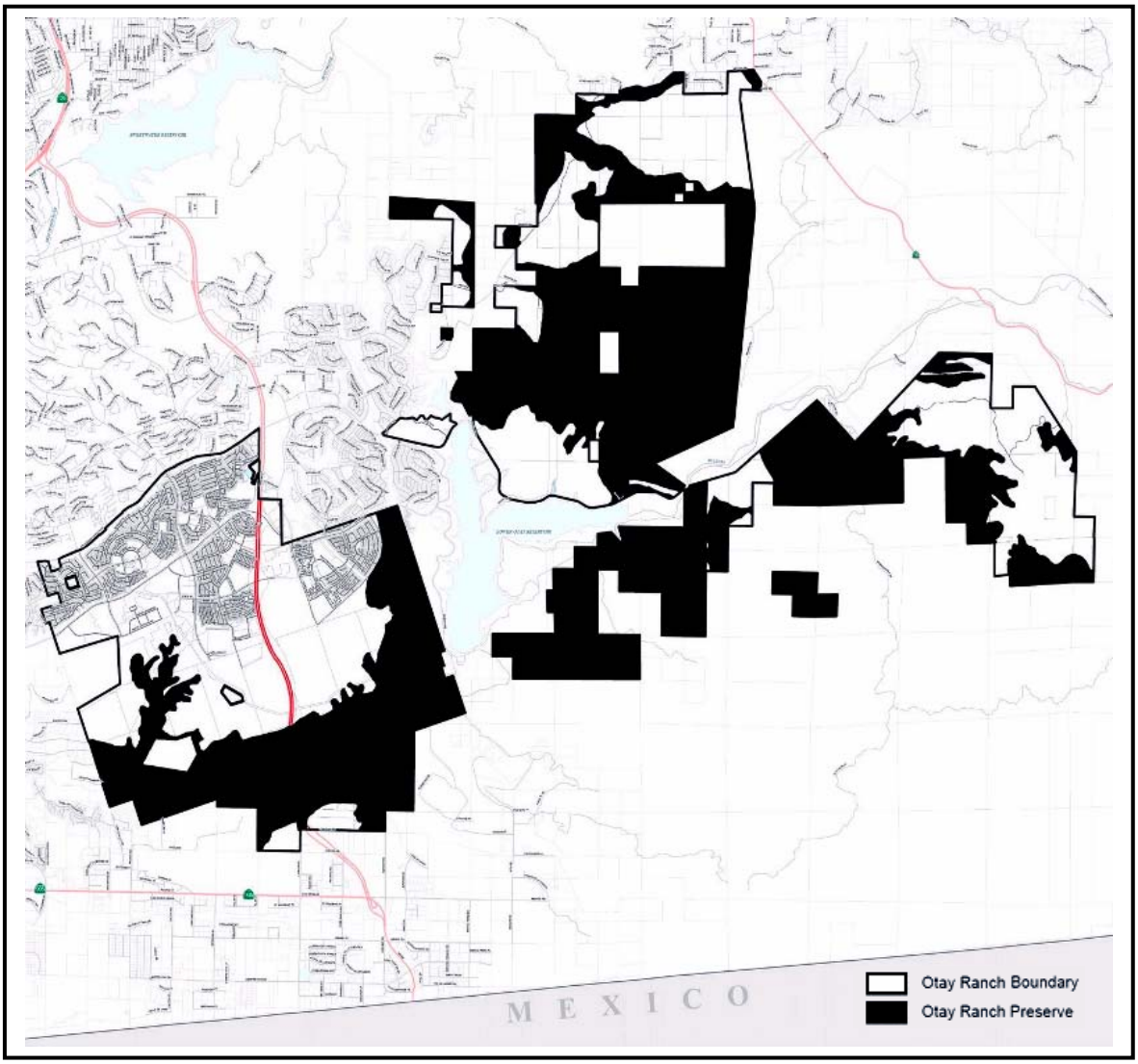
B.2 Phase 1 Resource Management Plan

The goal of the Otay Ranch RMP is to establish a permanent preserve within Otay Ranch to protect and enhance biological, paleontological, cultural and scenic resources, maintain biological diversity, and promote the survival and recovery of native species and habitats. It is a comprehensive plan for the preservation, enhancement, and management of sensitive natural and cultural resources within Otay Ranch. The RMP was adopted by the County and the City, concurrent with the enactment of the Otay Ranch GDP/SRP. For the purpose of clarity, this document refers to the initial RMP as the Phase 1 RMP.

The Phase 1 RMP identifies an open space system as a permanent 11,375 acre resource Preserve dedicated to the protection and enhancement of multiple resources present on Otay Ranch and provides objectives and policies that guide its implementation (*Figure 2*). The Preserve also connects large areas of open space through a series of wildlife corridors.

[1] Appendix A provides a chronology of Board and City Council actions since the adoption of the Otay Ranch GDP/SRP and Phase 1 and 2 RMPs

Figure 2 ***Otay Ranch Preserve***



B.3 Phase 2 Resource Management Plan

The Otay Ranch GDP/SRP provides that the Phase 1 RMP is to be implemented through the Phase 2 RMP. Unlike the Phase 1 RMP, the Phase 2 RMP is not a single plan or document, but rather a process. Phase 2 RMP encompasses a series of tasks that must be performed over time throughout implementation of the Otay Ranch GDP/SRP. Included as part of Phase 2 RMP is a conveyance process in which 1.188 acres of designated Preserve land will be conveyed to the POM upon recordation of each final map for every acre of development land. Thus, the approval of final maps for the 9,573 acres planned for urban development will result in the conveyance of 11,375 acres of designated Preserve (9,573 x 1.188 = 11,375).

Phase 2 RMP also identifies a collection of the implementation studies, plans, and programs which must be performed or processes which must be initiated as a condition of approval of Otay Ranch Specific Planning Area (SPA) One. Several of the Phase 2 RMP Studies, Plans, and Programs are of such scope and size that they could not be contained in a single document and are therefore presented as appendices to Phase 2 RMP. The appendices are as follows:

- Appendices F1. 1995 Contribution to Ongoing California Gnatcatcher and Cactus Wren Studies, Dudek 1995 (Gnatcatcher and Cactus Wren Studies)
- Appendices F2. Report on the Flora of the Otay Ranch Vernal Pools 1990-1991, San Diego County, California, Dudek 1992 (Vernal Pool Study)
- Appendices F3. Baldwin Otay Ranch Wildlife Corridor Study, Ogden, 1992 (Wildlife Corridor Study)
- Appendices F4. Otay Ranch Raptor Management Study, Ogden 1992 (Raptor Study)
- Appendices F5. Otay Valley Parcel Cultural Resources Systematic Survey, Smith 1995 (Cultural Resources Survey)
- Appendices F6. Vernal Pool Preservation Management Plan, Dudek 1995 (Vernal Pool Management Plan)
- Appendices F7. Range Management Plan, Dudek/Wright 1995
- Appendices F8. Otay Ranch Coastal Sage Scrub and Maritime Succulent Scrub Habitat Replacement Master Plan, Dudek 1995 (Coastal Sage Scrub Master Plan)
- Appendices F9. SPA One 1994/1995 Biological Data Base, Dudek 1995 (SPA One Biological Data Report)
- Appendices F10. Results of an Archaeological Survey and the Evaluation of Cultural Resources at the Otay Ranch Sectional Planning Area One and Annexation Project, Smith 1995 (SPA One Cultural Resources Site Analysis)
- Appendices F11. Biota Monitoring Program, Dudek 1995
- Appendices F12. POM Joint Powers Agreement

B.4 Otay Ranch Preserve Owner/Manager

The Otay Ranch GDP/SRP and the Phase 1 RMP required the selection of a Preserve Owner/Manager (POM) (GDP/SRP Page 372-373; Phase 1 RMP Policies 5.1, 5.2).

The POM oversees the day-to-day and long-range activities within the Preserve. The POM takes an active role in the maintenance and enhancement of biological resources, the development of educational programs, and the implementation of Phase 1 and 2 RMP policies related to management of the resource preserve. The POM participates in the decision-making processes for all activities and amendments to the GDP or RMP or both that potentially affect the integrity of the resource preserve.

The duties and responsibilities of the POM include, but not limited to, the following:

- Maintenance and enhancement of all resources through the prevention of further disturbance, including controlling access to the resource preserve, prohibiting off-road traffic, enforcing “no trespassing” rules, and curtailing activities that degrade resources, such as grazing, shooting, and illegal dumping;

- Monitoring of resources to identify changes in the quality and quantity of sensitive resources and habitats to assure compliance with the adopted mitigation monitoring and reporting program;
- Implementation and monitoring of restoration activities, as appropriate (it is understood that some restoration activities may be carried out by individual Otay Ranch developers in coordination with the POM);
- Implementation of maintenance activities including removal of trash, litter, and other debris, maintenance of trail systems, removal and control of exotic plant species (weeds), and control of cowbirds through trapping efforts;
- Development of educational facilities and interpretive programs;
- Implementation and/or coordination and accommodation of research programs;
- Coordination with local jurisdictions, resource agencies, and adjacent ownerships;
- Coordination with the Otay Valley Regional Park (OVRP) Joint Exercises of Power Agreement (JEPA) or subsequent park planning entity, regarding issues associated with OVRP;
- Enforcement activities;
- Review of RMP Amendments, Preserve boundary adjustments, infrastructure plans, plans for active recreational uses within the resource preserve, plans for land uses adjacent to the Preserve and other activities/studies as identified in the RMP;
- Develop and implement a strategy that facilitates effective, long-term management of the Preserve consistent with the goal of the RMP;
- Development and implementation of a management program to ensure no reduction in habitat values and no adverse impacts to biological resources occur within the Preserve;
- Establish a comprehensive monitoring program for the biota of the resource preserve in conjunction with the Phase 2 RMP;
- Develop and implement an annual monitoring program designed to identify changes in quality and quantity of on-site biological resources, including sensitive wildlife species, sensitive plant species, and sensitive habitat types; and
- Coordination with the MSCP, NCCP, or other adopted subregional habitat planning programs to assure consistency with regional conservation efforts and plans.

In May 1995, representatives from the County and City conducted candidate interviews for the POM. The Wildlife Agencies, the OVRP Citizen Advisory Committee and representatives from the property owners participated in the interview process.

After the interviews, the County and City jointly concluded that the role of the POM needed to be better defined and that the cost of operating the Preserve needed to be more precisely calculated. It was further concluded that none of the candidates demonstrated the range of skills and experience necessary to permanently perform the POM function. Additionally, many of the candidates expressed discomfort at being asked to make a long term commitment to an 11,375 acre Preserve without better definition of the resource preserve and attendant POM responsibilities.

In response to these issues, the County and City agreed that it was best suited to select themselves as the POM until greater information was known about the scope and nature of the Preserve. The allocation of POM responsibilities was jointly prepared by a City Council Ad Hoc Committee comprised of the Acting County Planning Director, the Acting County Parks Director, the Chula Vista Parks Director and the Executive Director of the Chula Vista Nature Interpretive Center[2].

C. Relationship to the Multiple Species Conservation Program

The Otay Ranch GDP/SRP and the Phase 1 RMP contain the following policy language:

> Implementation Measure: Preservation and restoration activities shall be consistent with the guidelines of any applicable regional open space/ resource protection program and shall result in equal or greater overall habitat values than occur under existing conditions. (GDP/SRP, Page 362, Phase 1 RMP Page 69)

The Multiple Species Conservation Program (MSCP) is an "applicable regional open space/resource protection program" governing Otay Ranch. The MSCP creates a process for the issuance of federal and state permits and other authorizations under the Federal and State Endangered Species Act (ESA) and the Natural Communities Conservation Plan (NCCP) Act of 1991. The plan emphasizes the protection and management of habitats for multiple species rather than focusing on preservation efforts on one species at a time.

The Otay Ranch GDP/SRP, when coupled with the Otay Ranch RMP and the Mitigation Measures imposed by the Otay Ranch Program EIR, meets or exceeds virtually all the preservation standards contained in the MSCP.

C.1 County of San Diego

Subsequent to the approval of the Otay Ranch SRP/GDP the Board adopted the County's MSCP Subarea Plan on October 22, 1997. The County's Implementing Agreement became effective on March 17, 1998. The Implementing Agreement identifies the goals, objectives and responsibilities of the signatories including the Wildlife Agencies and the County.

[2] Section I.D discusses the allocation of POM responsibilities.

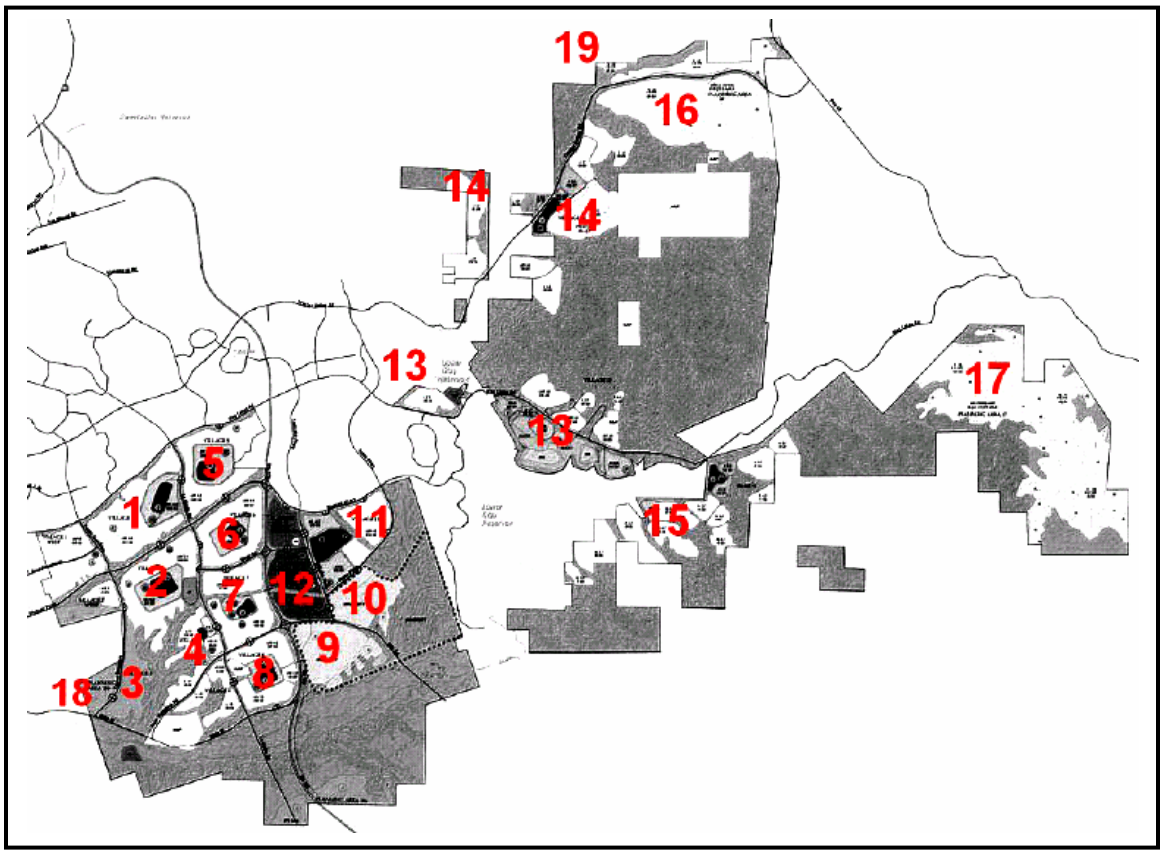
The 98,379 acres of the County's MSCP preserve will be comprised of land identified as hardline preserve areas or Pre-Approved Mitigation Areas (PAMA). Hardline Preserve areas include those areas defined as baseline preserve areas (see below) and areas within the Lake Hodges and South County Segments that were negotiated to be preserve land prior to or concurrently with the approval of the County's MSCP Subarea Plan.

Since the inception of the MSCP, the County and its partners have conserved through acquisition, dedication of easements and baseline preserve, 65,149.4 acres of land (2006 County of San Diego MSCP Annual Report, Page 3). In addition to this acreage, 18,434 acres of private baseline land (including the 11,375-acre Otay Ranch Preserve) were committed through the County MSCP Subarea Plan and will be dedicated in conformance with the Subarea Plan as development occurs.

Otay Ranch is within the South County Segment of the MSCP, which includes about 48,240 acres of open space within the County's jurisdiction. Adjustments were made to Otay Ranch development patterns resulting from the County MSCP Subregional Plan negotiations. This involved the change of 427 acres from development designation to open space and the change of 313 acres from Preserve to development. These changes represent a net increase of 114 acres in Otay Ranch open space, an environmental benefit. Environmental impacts of these changes and designation of 11,375 acres of open space were addressed in the MSCP EIR/EIS, dated January 1997.

The County with the USFWS is processing an amendment to the MSCP Subarea Plan to provide "coverage" for the Quino checkerspot butterfly. Specific areas of Otay Ranch have been identified as sensitive for Quino checkerspot: Villages 13 and 15 have populations, Village 14 has habitat in proximity to populations, and Village 17 has some populations near limited development areas (*Figure 3*). There are likely to be some adjustments to development bubbles. The probable effect will be that there will be a net increase in area placed into open space preserve as a result of the project. The overall effect of efforts to gain coverage for the Quino checkerspot butterfly will be environmentally beneficial. The County maintains an updated webpage containing information about the Quino checkerspot butterfly: http://www.sdcounty.ca.gov/mscp/quino.html. The protocols are in review, and no Board action on implementation has been made.

Figure 3 ***Otay Ranch Village Locations***



C.2 City of Chula Vista

The City's Final MSCP Subarea Plan was approved by the City Council on May 13th, 2003. As of January 11, 2005, the City was issued a Section 10(a)(1)(b) Incidental "Take" Permit by the Wildlife Agencies, which grants the City long-term authorization to "take" (or impact) certain Covered Species as defined in the Endangered Species Act. In addition, this Take Permit provides the City the authority to allow a landowner or other public or private entity to impact sensitive species covered under the City's MSCP Subarea Plan.

An Implementing Agreement was signed by the City and the Wildlife Agencies in order to ensure implementation of the City's MSCP Subarea Plan. The Implementing Agreement serves as the legal agreement between the City and Wildlife Agencies binding each of the parties to perform the obligations, responsibilities, and tasks assigned within the Agreement.

The City's MSCP Subarea Plan provides a blueprint for habitat preservation and forms the basis for federal and state incidental "take" permits for 86 plant and animal species within Chula Vista. The Subarea Plan provides conservation of covered species and their associated habitats. Specifically, the Plan includes: 1) A Quino checkerspot butterfly Recovery Component sufficient to warrant coverage for the species and making it the "86th" covered species under the City's requested incidental take permit; 2) additional conservation on a number of properties increasing the City's overall Preserve acreage; and 3) implementing ordinances and an implementing agreement to provide further assurance that the Subarea Plan will be implemented as described in the Plan.

The City's Preserve will eventually encompass approximately 5,000 acres of the City's most sensitive open space areas. In addition, another approximately 4,200 acres outside the City's jurisdiction will be preserved as a result of development occurring within the City's urban boundaries. Lands set aside within the Preserve will be appropriately managed while still providing passive recreational opportunities for area residents and the public at large.

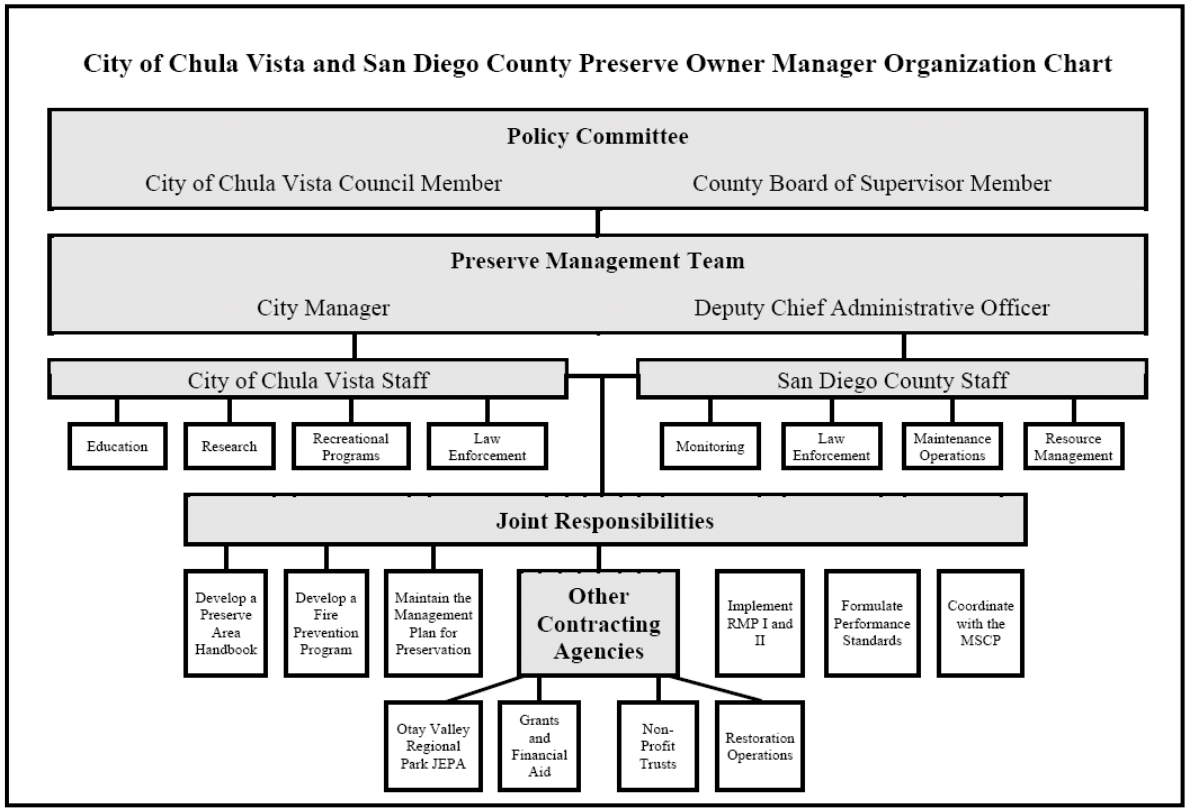
Because the City's MSCP Subarea Plan includes coverage for the Quino checkerspot butterfly, the protocols and requirements are included in this document and will be implemented. Over time, other MSCP amendments may occur, necessitating revision of this implementation program. The RMP will also need to incorporate changes to the MSCP. The POM will need to keep up-to-date on these amendments, and provide feedback on the additional costs and effort needed to comply with any changes to the MSCP.

D. Roles and Responsibilities

The following are the elements of the Otay Ranch POM Management Structure:

- The County and the City jointly name each other as the Otay Ranch POM (reviewed every 5 years).
- The County and the City execute a Joint Powers Agreement (Appendix B) to delineate their respective roles and responsibilities.
- Property conveyed to the POM will be conveyed to the County and the City with an undivided interest.
- The County and the City jointly exercise responsibility and authority to review and comment on the various tasks, plans and programs identified in the RMP.
- The Board designates the Chief Administrative Officer to exercise the review and comment authority described above.
- The City Council designates the City Manager or his/her designee as authorized to exercise the review and comment authority described above.
- The responsibility for the various RMP tasks will be generally allocated to the County and the City according to the following broad classifications (*Figure 4*):
    - Resource Protection, Monitoring and Management - County of San Diego
    - Environmental Education - City of Chula Vista
    - Research - City of Chula Vista
    - Active and Passive Recreation - City of Chula Vista
    - Law Enforcement - Shared responsibility based on jurisdiction
- The County and the City would retain independent authority to contract with other parties to perform their respective allocated tasks.

Figure 4 ***POM JEPA Organization Chart***

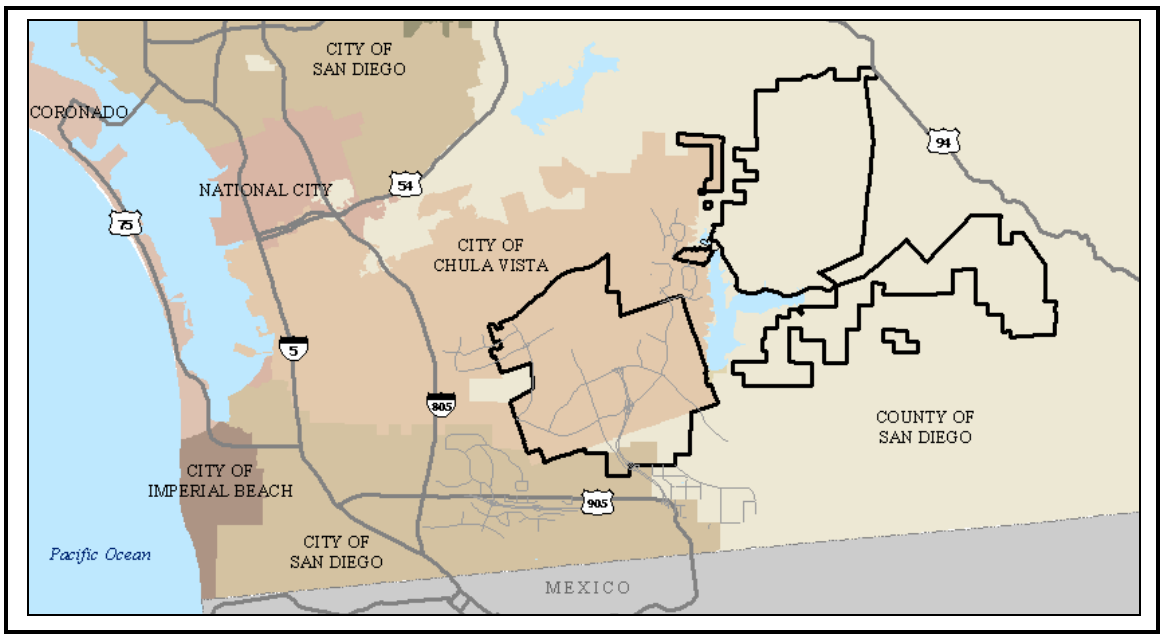


II. PROPERTY DESCRIPTION

A. Property Boundaries and Adjacent Land Use

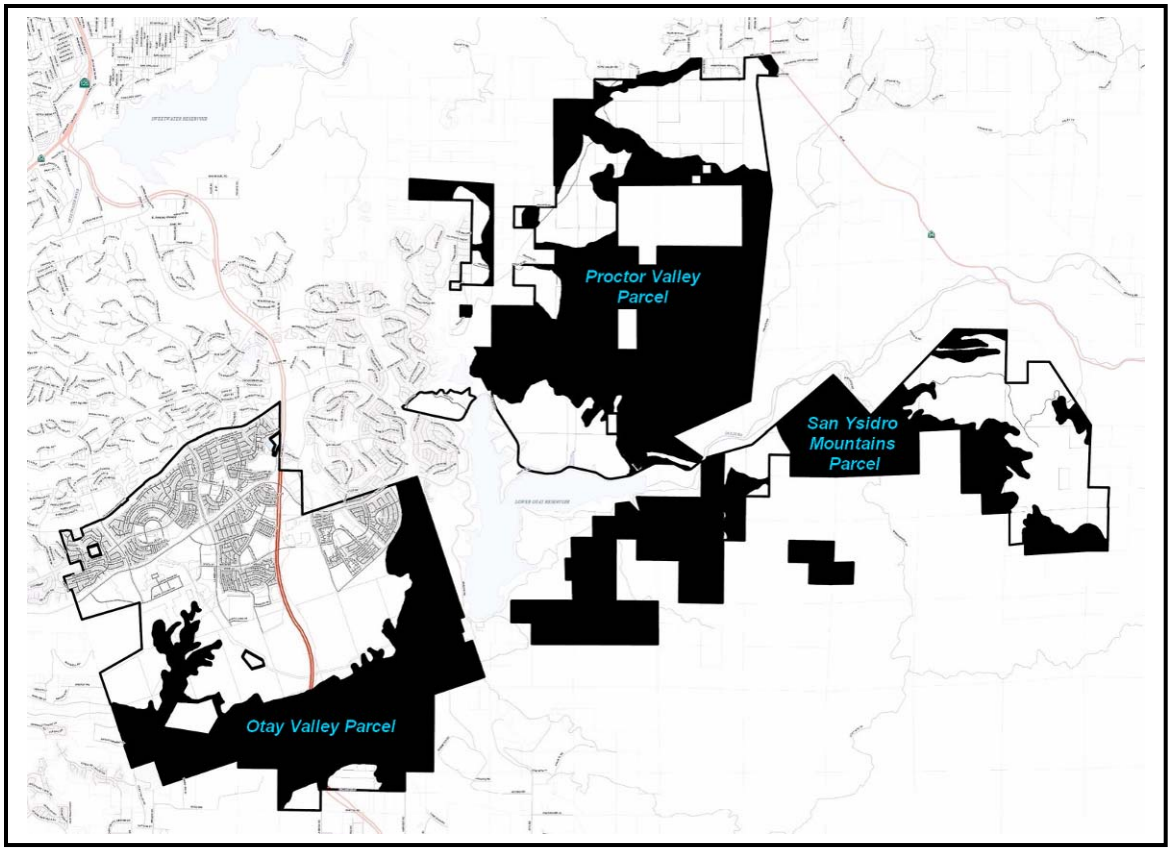
The 23,000 acre Otay Ranch is located in southwestern San Diego County, south of the rural community of Jamul, north of Brown Field and the San Ysidro Mountains, east of the Otay Landfill, and west of the community of Dulzura. The southernmost boundary of Otay Ranch is approximately 2 miles north of the United States-Mexico international border. The combined properties span a distance of approximately 12-miles from east to west, and 8.5 miles from north to south. The western part of the irregularly shaped 23,000-acre project is located within the City, while the eastern part is within the jurisdiction of the County (*Figure 5*). The 2,900 acres encompassing the Otay Lakes is owned by the City of San Diego. Regional access to the project area is gained from Interstate 805 or State Route 125 via Telegraph Canyon Road, Olympic Parkway, Otay Mesa Road, or Proctor Valley and Otay Lakes Roads via Highway 94 (Campo Road).

Figure 5 ***Otay Ranch Jurisdictional Boundaries***



For planning purposes, Otay Ranch is grouped geographically to form three distinct parcels: Otay Valley Parcel, Proctor Valley Parcel, and San Ysidro Mountains Parcel (*Figure 6*).

Figure 6 ***Otay Ranch Major Parcels***

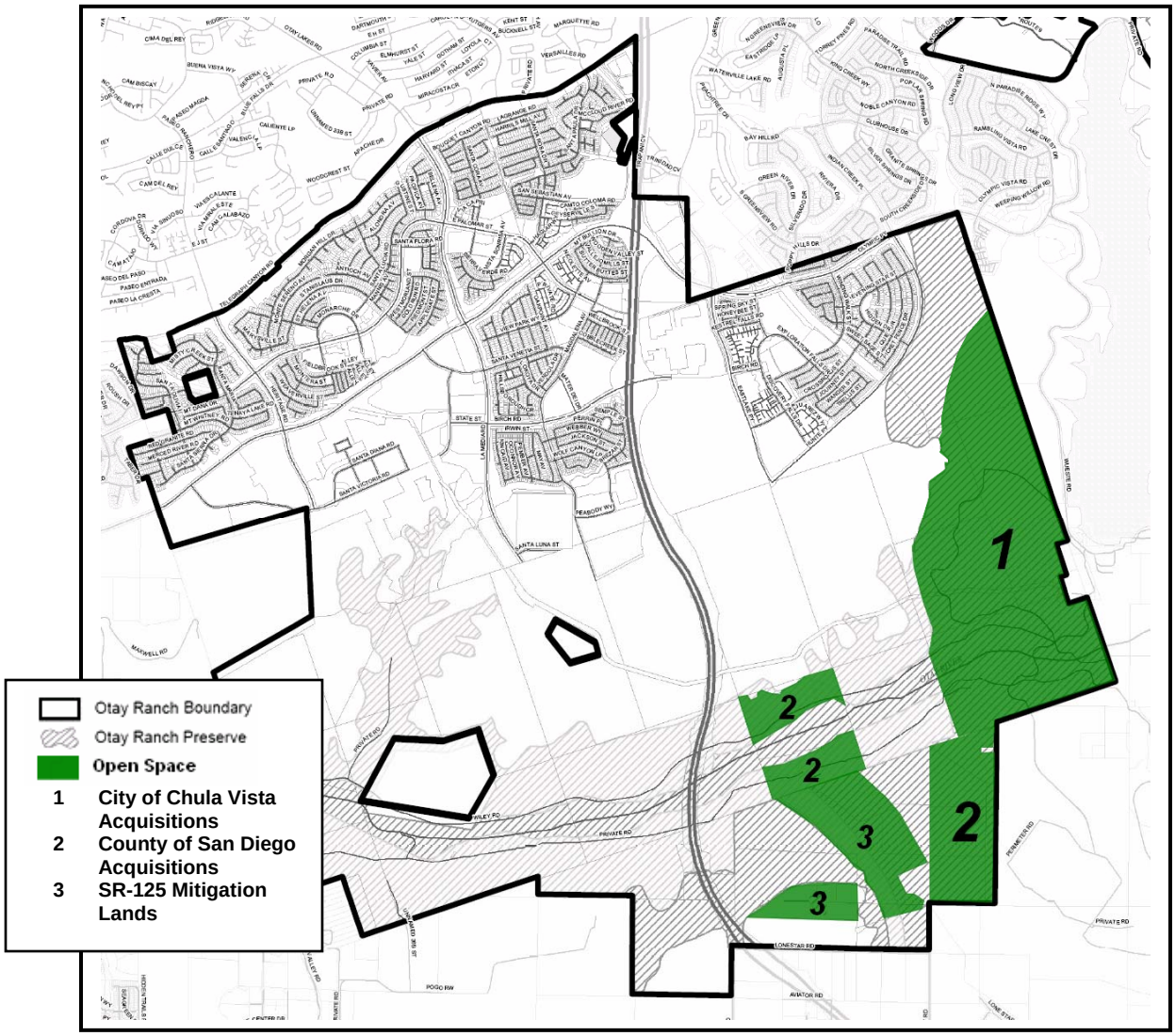


The Otay Valley Parcel is the largest parcel of Otay Ranch, comprising approximately 9,600 acres. This area of land is bounded by Telegraph Canyon Road on the north, Heritage Road and the Otay Landfill site on the west, Brownfield on the south, and Lower Otay Lake on the east. Several natural landforms are situated within this parcel: Wolf Canyon, Salt Creek, Poggi Canyon, Johnson Canyon, O'Neal Canyon and Rock Mountain. Approximately 3,500 acres of this parcel are designated as Preserve focusing on the habitat located in and on the slopes of the Otay River Valley, Salt Creek, and portions of Wolf Canyon.

Areas to the south, west, and north of the Otay Valley Parcel, i.e. Otay Mesa and the City of Chula Vista, are areas that are rapidly developing. Major land uses near Otay Ranch in Otay Mesa include the Brown Field Municipal Airport, the East Mesa (George F. Bailey) Detention Facility, the Richard J. Donovan Correctional Facility. The City of Chula Vista is characterized by residential development with supporting commercial/industrial and public land uses.

To date, 1,279.75 acres have been designated as open space (*Figure 7*). The City has acquired 776 acres through a University Agreement between NM Homes Two, Inc., a Delaware corporation, B III Capital Partners L.P., a Delaware limited partnership, Otay Land Holdings, LLC, a Delaware limited liability company, Pearl Tech, LLC, a Delaware limited liability company, and M/O Holdings, LLC, a Delaware limited liability company, and the City entered on March 7, 2000 and a Conveyance Settlement Agreement between Otay Land Company, LLC, a Delaware limited liability company, the City, and Otay Project LP, a California limited partnership entered on August 27, 2002. In 2004 and 2006, the County acquired 305.05 acres through California Coastal Conservancy grant monies. Caltrans has purchased 198.7 acres (146.1 acres within the Preserve and 52.6 acres of developable Otay Ranch land) as mitigation for the State Route 125 project.

Figure 7 *Designated Open Space in the Otay Valley Parcel*



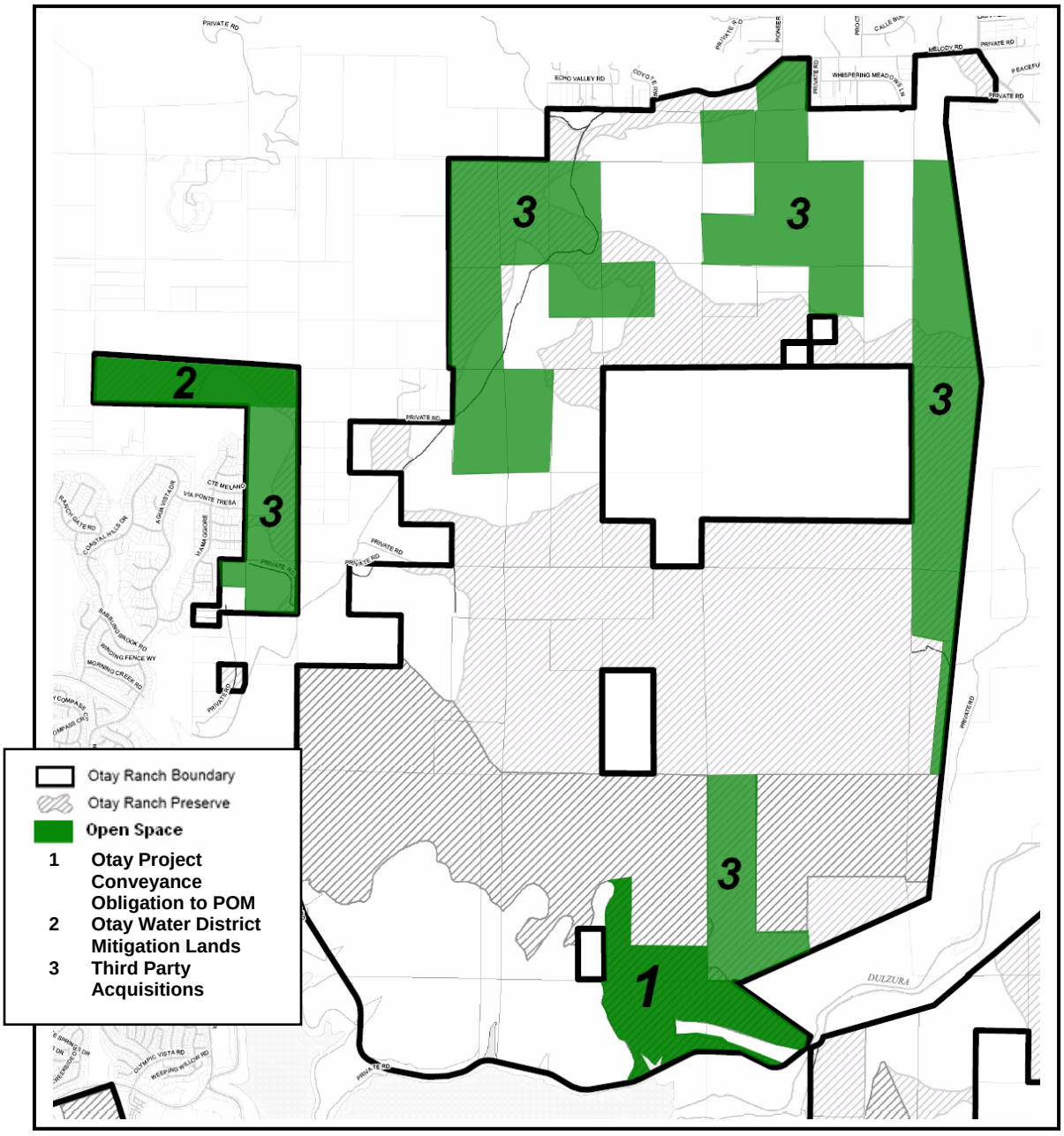
A.2 Proctor Valley Parcel

The Proctor Valley Parcel comprises approximately 7,900 acres. The Proctor Valley area is the northernmost portion of the pace, which is generally bounded by Otay Lakes Road and Lower Otay Lake to the south, the Upper Otay Lake and San Miguel Mountains to the West, the community of Jamul to the north and Rancho Jamul Ecological Preserve (managed by CDFG) to the east. The Proctor Valley Parcel also includes the Mary-Birch-Patrick Estate and the "Upside-Down L" areas. The four outparcels encompassed by the Proctor Valley parcel correspond to two sections of land owned by the Bureau of Land Management (BLM) (80 and 751 acres) and two private holdings (10 and 20 acres). The major landforms include the Jamul and Callahan mountains. Approximately 4,700 acres of the Preserve are located in the Proctor Valley Parcel with valuable corridor linkages through Proctor Valley to the San Miguel Mountains, and from the Jamul Mountains to Otay Lakes and the San Ysidro Mountains.

Most of the land in the vicinity of this parcel to the west and east is vacant; south, north and northwest of the Jamul Mountains, the land consists of broad gentle mesas used for agriculture and grazing (Proctor Valley on and adjacent to the site), while terrain in the central and eastern part of the Proctor Valley parcel consists of more rugged, steep open space (San Miguel Mountain on the west and Jamul and Callahan Mountains to the north and east). Development is concentrated primarily around the SPA of Ranch San Diego to the north and the rural community of Jamul to the northeast. Village 13, Preserve and Resort Community, is the only development project currently being processed within the County's jurisdiction. The current Village 13 application proposes a resort hotel complex, residential development, and RMP/MSCP open spaces.

To date, 2,300.59 acres have been designated as open space (*Figure 8*). This has been achieved through conveyance of 254.71 acres from Otay Project to the POM, the purchase of 160 acres by Otay Water District as mitigation lands, and third party (U.S. Fish and Wildlife Services, CA Department of Fish and Game, and Trust for Public Lands) acquisition of 1885.88 acres. The Otay Water District mitigation lands and the third party acquisitions include both Preserve and developable Otay Ranch land.

Figure 8 *Designated Open Space in the Proctor Valley Parcel*



A.3 San Ysidro Mountains Parcel

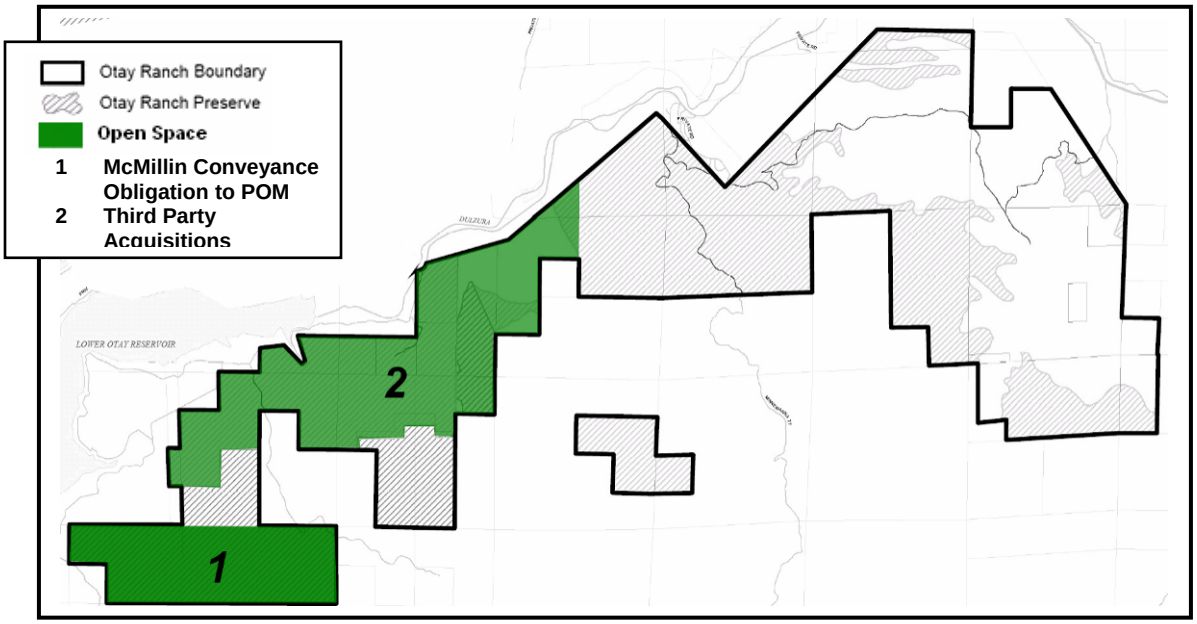
The San Ysidro Mountains Parcel is comprised of approximately 5,600 acres located in the southeastern portion of the project area, along the fringes of the northern foothills of the San Ysidro Mountains and the Otay Mountain. It is composed of two discontinuous ownership parcels. The parcel is generally bounded by the eastern arm of Lower Otay Lake and vacant land along Otay Lakes Road to the north, the main body of Lower Otay Lake to the west, open space land owned and managed by the BLM to the south, and

vacant land just west of the community of Dulzura to the east. The smaller, 160-acre parcel, is surrounded on four sides by BLM property. Major landforms contained within this region include Little and Big Cedar canyons and Hubbard Springs. Approximately 3,200 acres are located in the San Ysidro Mountains parcel that serve as both high quality, diverse habitat and a link to the existing BLM wildlife management area with Otay Lakes and the rest of the Preserve system.

The area surrounding the San Ysidro Mountains parcel is primarily open space. A Thousand Trails Recreational Vehicle (RV) Park and the Daley Quarry are located between the Proctor Valley and San Ysidro Mountains parcels off Otay Lakes Road. Other recreational land uses are located to the west of the San Ysidro Mountains parcels at Lower Otay Lake, County Otay Lakes Park, and the San Diego Air Sports Center located on the eastern side of Lower Otay Lake.

To date, 1,544.71 acres have been designated as open space (*Figure 9*). This has been achieved through the conveyance of 517.42 acres from McMillin Companies to the POM and third party (U.S. Fish and Wildlife Services and CA Department of Fish and Game) acquisition of 1,030.25 acres. The third party acquisitions include both Preserve and developable Otay Ranch land.

Figure 9 *Designated Open Space in the San Ysidro Mountains Parcel*



B. Geology, Soils, Climate, Fire History, and Hydrology

B.1 Geology

Regionally, the Otay Ranch is located within the Peninsular Range Geomorphic Province see also *Figures 10 through 12*). The Peninsular Range is composed of a series of northwest-trending uplifted blocks which are separated by similarly trending faults. The uplifted blocks are composed of Mesozoic-age metamorphic and igneous plutonic basement rocks. In the San Diego area, the Peninsular Range Geomorphic Province is divided into two major physiographic and geologic sections. To the east is the dissected mountain-valley section consisting of uplifted basement rock uplands with intervening alluvial-filled valleys. To the west is the coastal plain section, which is characterized as marine terraces composed of Cretaceous, Tertiary, and Quaternary sediments.

The Otay Ranch site is located in the transitional area between the mountain-valley section and the coastal plain section. The eastern and northern portions of the project area are typical mountain valley sections; these areas include the wide, generally flat Proctor Valley area and portions of the Jamul Mountains and San Ysidro Mountains. The western portions is typical of the coastal plain; it consists of broad, gentle mesas traversed by the Otay River Valley and associated finger canyons.

The mountain-valley section of Otay Ranch is primarily composed of Mesozoic-age metavolcanic rocks. The metavolcanic rocks include the resistant Santiago Peak Volcanics (Upper Jurrassic), which are primarily dacite and andesite in composition. Igneous plutonic rocks crop out to the east and northeast of the project and may also be present in the Jamul Mountains in the northeastern portion of the property. Unnamed fanglomerates of middle Tertiary-age crop out along Otay Lakes and are composed of angular clasts in a medium to coarse-grained sandstone matrix.

Surficial depostis exist throughout the Otay Ranch property and include fluvial-terrace, landslide, topsoil, colluvial, and alluvial deposits. Fluvial-terrace deposits composed of thin, unconsolidated sands and gravels, occur along the Otay River Valley. Landslide deposits exist primarily along the steep slopes of Wolf Canyon, Poggie Canyon, and along the north facing slope of the Otay River Valley. The landslide deposits primarily consist of poorly consolidated sedimentary bedrock. Topsoil deposits, mantle ridge tops and alluvial deposits exist in the Otay River Valley, Wolf Canyon, Telegraph Canyon, Poggi Canyon, Salt Creek, and Proctor Valley. The alluvium generally consists of fine- to coarse-grained sand, with gravels, cobbles, and boulders. The thickness of the alluvium in the Otay River Valley ranges from 1 to 7 feet, and similar thickness are probably present in the other drainages. Subsurface investigations revealed that in one location of Telegraph Canyon, the alluvium is as thick as 30 feet.

Figure 10 ***Geology of Otay Valley Parcel***

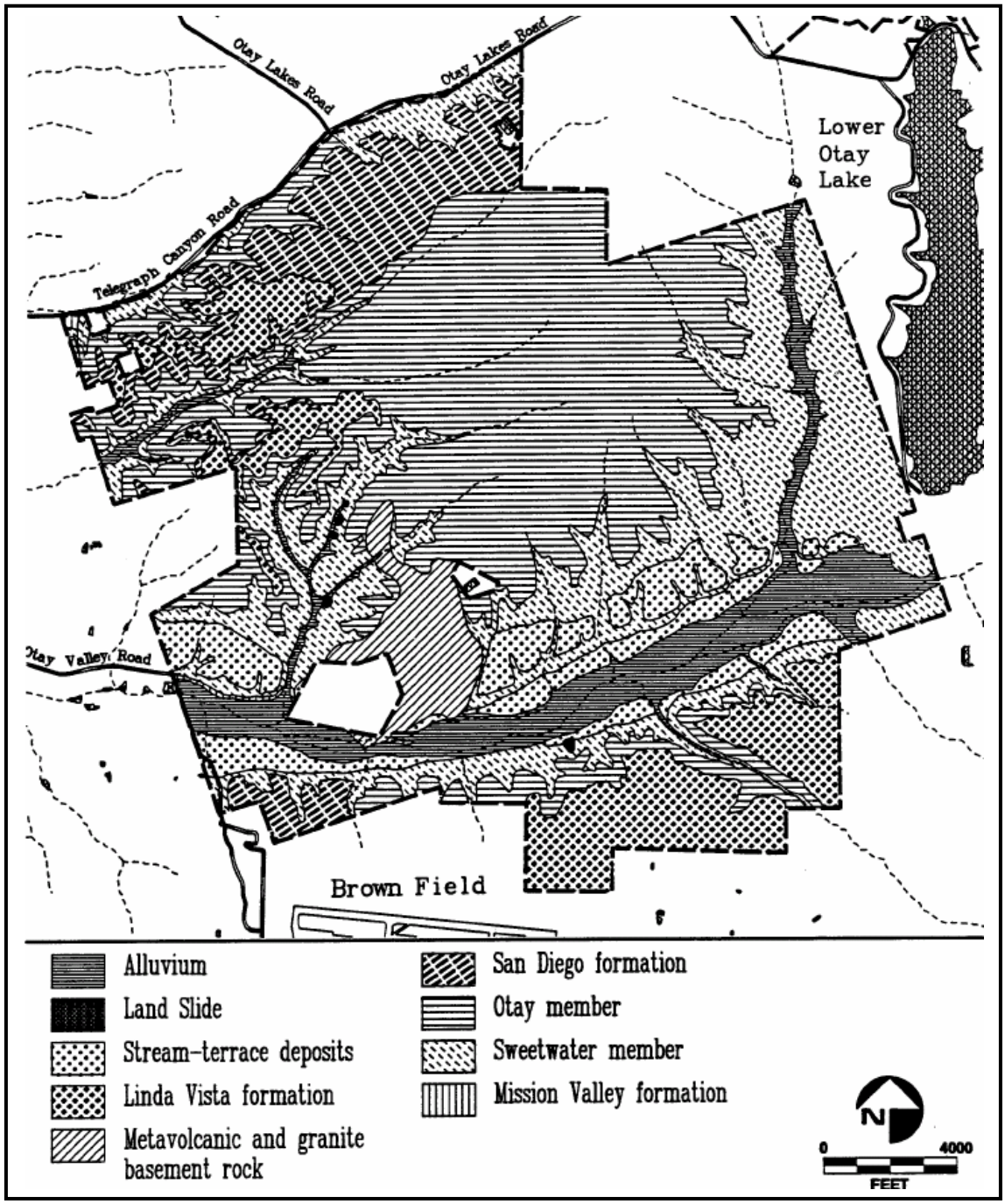


Figure 11 ***Geology of Proctor Valley Parcel***

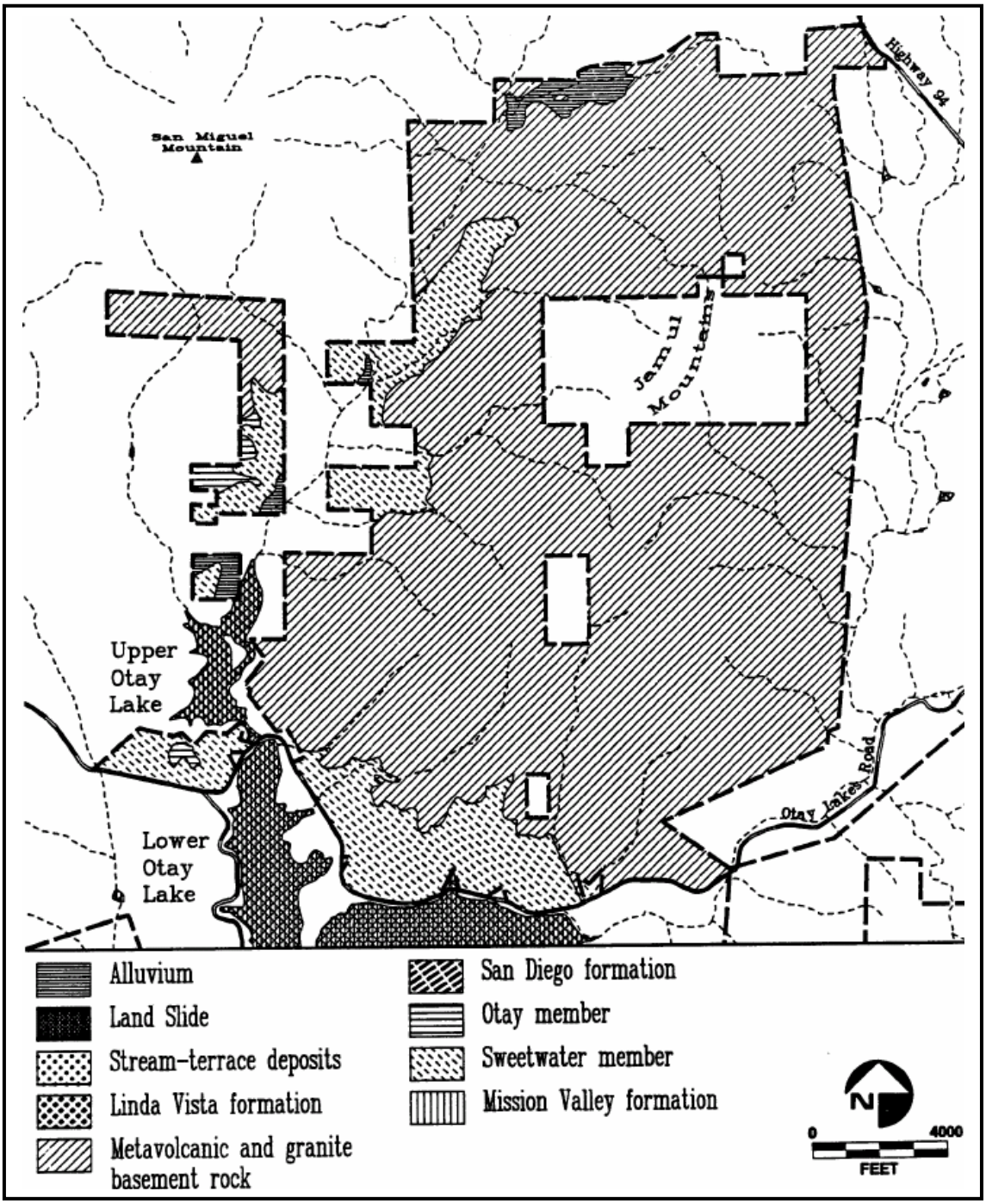
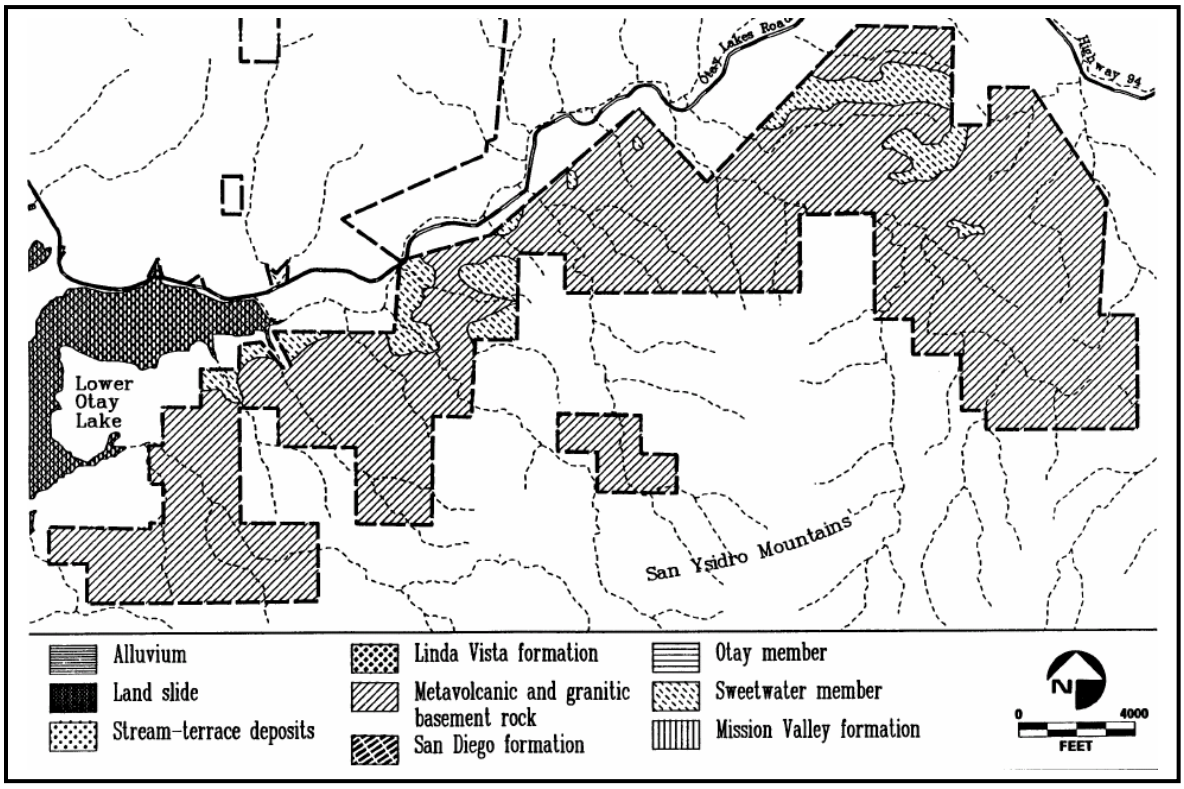


Figure 12 ***Geology of San Ysidro Mountains Parcel***



B.2 Soils

There are a total of 17 soils series on Otay Ranch; several of these are divided into phases. The locations of these soils are shown in Figures 13 through 15. The predominant soil series (more than 1 percent of the project area) are the Diablo clay, Escondido very fine sandy loam, Friant sandy loam, Heuerhuero loam, Olivenhain cobbly loam, Riverwash, Salinas clay loam, San Miguel-Exchequer rocky silt, and Stockpen gravelly clay. Other soil series and combinations of soils are present on the property; however, individually they comprise less than 1 percent of the total soil coverage and are not discussed in detail.

The Diablo series (clay) is primarily found on mesas and ridges in the western portion of the property. Diablo soils are also located along the southern slope of the Otay River Valley. They primarily develop on the Otay Formation and to a lesser extent on the Sweetwater and San Diego formations. Due to the bentonite content of the Otay Formation, this soil has a high shrink-swell potential.

The Escondido soil series exists on gently rolling to hilly uplands. This soil develops over weathered metamorphic sandstone and consists of very fine sandy loams.

Friant soils are common in the mountainous eastern portions of the property in the Jamul Mountains, areas of Dulzura Creek, and Sycamore Canyon. Friant soils are composed of sandy loams.

Huerhuero and Olivenhain soil series are found in drainages associated with the Otay River and along the northern slopes of the Otay River Valley. These two soil series are also present in a large portion of Proctor Valley and occur on fluvial terrace deposits. Mima mounds or broad-based, low hummocky topography are common in Olivenhain and Huerhuero soils. Generally, these soil series are associated with the Sweetwater Formation. The Huerhuero soils have a high shrink-swell potential.

The Riverwash soil series occurs in intermittent stream channels. It consists of sand, gravel, and cobbles.

The Salinas soil series occurs over alluvium and fluvial terrace deposits along canyon bottoms and portions of the Otay River Valley. This soil is also present on alluvial fans. It consists of well-drained clay loams.

The San Miguel-Exchequer soil occurs in mountainous uplands at elevations of 400 to 3,300 feet above msl. It primarily occurs in the San Ysidro Mountains and the western slope of the Jamul Mountains. It consists of rocky, silty loams and has a high shrink-swell potential.

The Stockpen soil series develops on the mesa surface south of the Otay River Valley. It is associated with the Lindavista Formation. Mima mounds are commonly found on this soil. Stockpen soil consists of deep, gravelly, clayey loams and has a high shrink-swell potential.

Figure 13 ***Soils in Otay Valley Parcel***

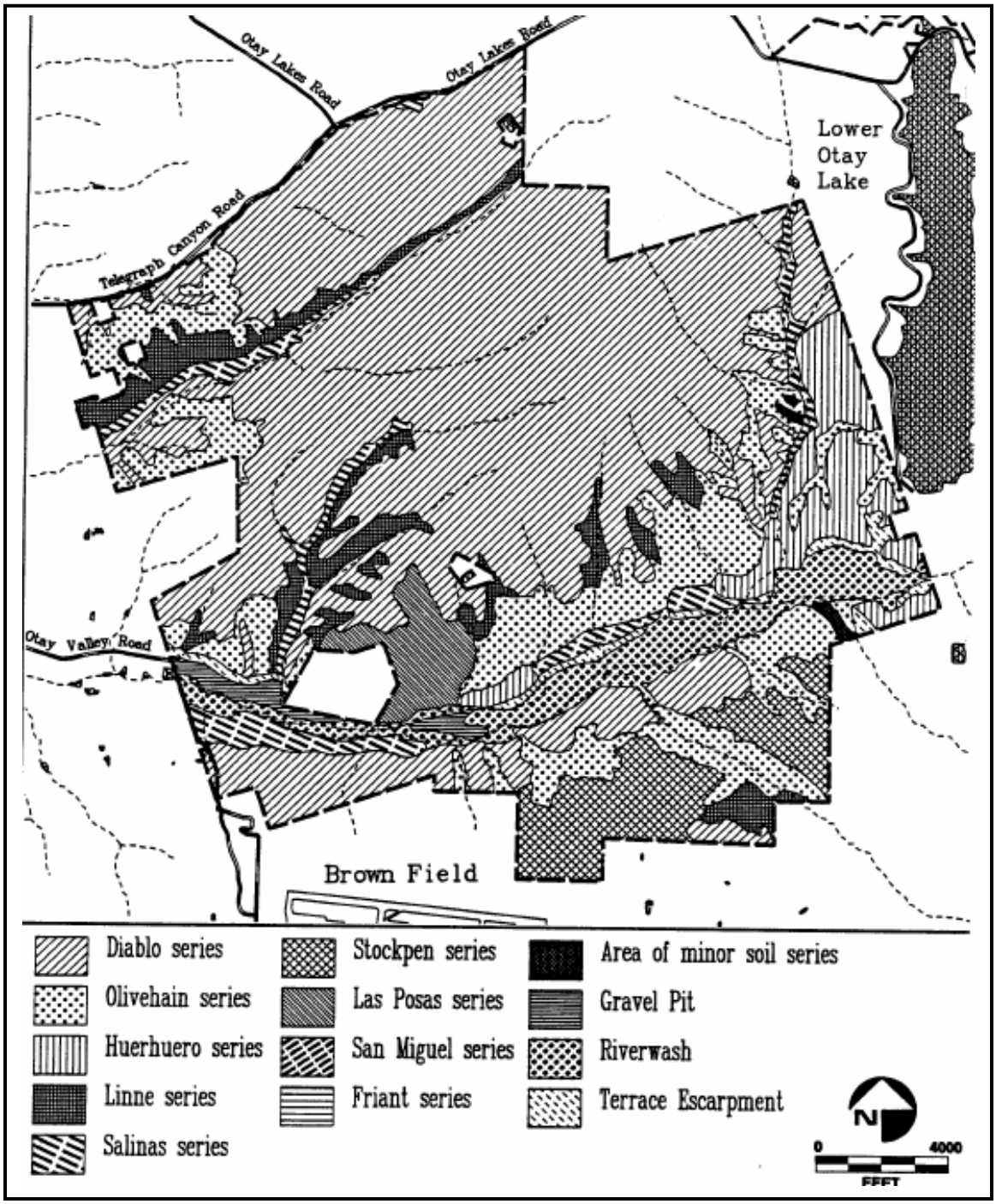


Figure 14 ***Soils in Proctor Valley Parcel***

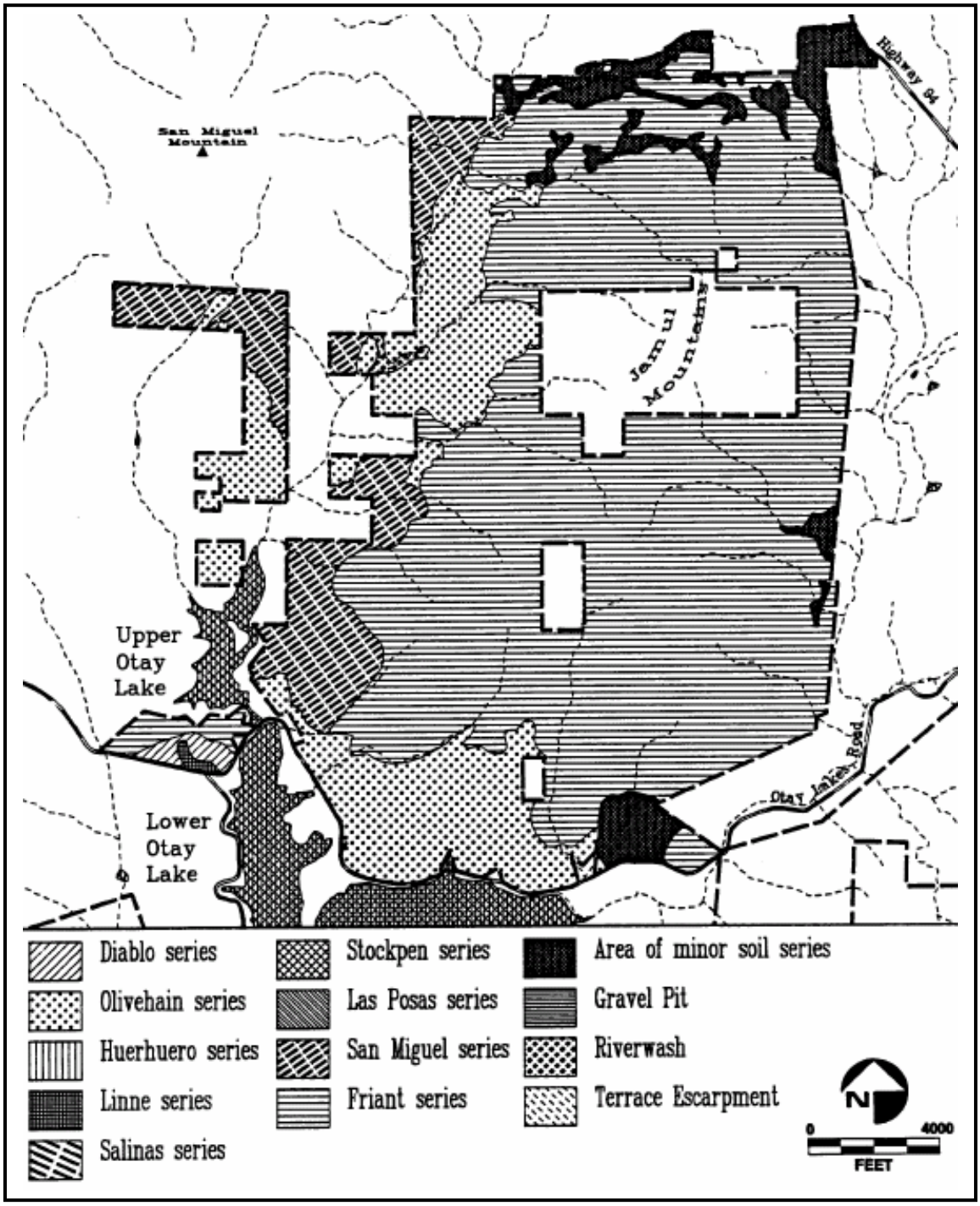
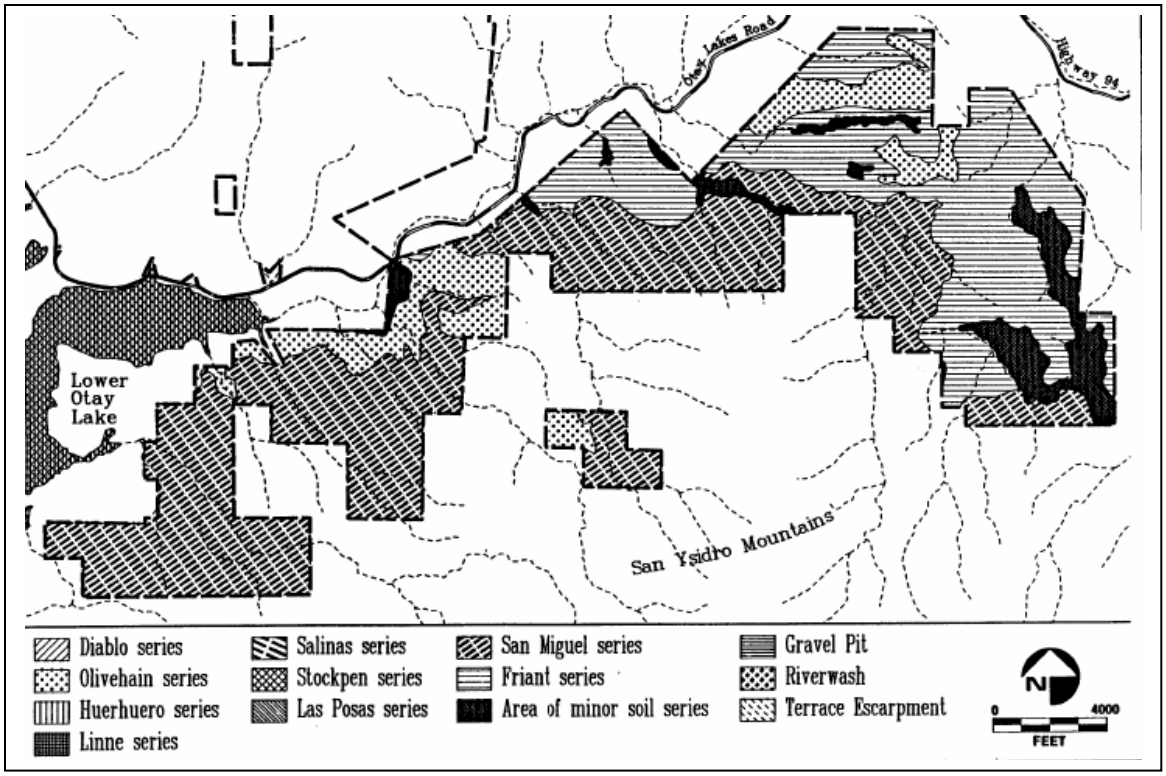


Figure 15 ***Soils in San Ysidro Mountains Parcel***



B.3 Climate[3]

The regional climate for Otay Ranch is classified as Mediterranean, with warm, dry summers and mild, wet winters. Precipitation averages range from 25.4 cm. (10 in.) along the coast to 45.7 cm. (18 in.) in the eastern mountains (Figure B.1-3), with low to high intensity storms occurring mostly in the winter and spring. Frosts are light and infrequent, with the growing season ranging from 345 to 360 days, depending on distance from the ocean. The average annual temperature is about 63 ºF (17.2 ºC), with an average daily high of 71ºF (21.7ºC) and an average daily low of 53ºF (11.7ºC).

The major influences on the regional climate are the Eastern Pacific High, a strong persistent anticyclone, and the moderating effects of the cool Pacific Ocean (U.S. Army Corps of Engineers, 1998). During the summer, the Eastern Pacific High dominates the Eastern Pacific Ocean, creating fair weather and producing a temperature inversion. Thermal low-pressure systems that typically develop over the inland deserts draw cool marine air onto the land, moderating the daytime temperatures. This marine air frequently condenses into fog and stratus clouds below the inversion layer during the evening but dissipates during the following day as the land mass warms. Summer precipitation associated with tropical air masses is generally infrequent and light.

[3] Excerpt from the Otay River Watershed Management Plan adopted by the Board on May 10, 2006.

During winter and spring, polar storm systems pass through the region as the Eastern Pacific High weakens and shifts south. Most regional precipitation occurs during this period. Excessive rainfall can occur when the jet stream maintains a position over southern California and carries multiple storms across the region. Moderate to major flooding events for this region typically occur December to March and have been documented for the following years during the 20th century: 1906, 1916, 1921, 1927, 1937, 1938, 1969, 1978, 1980, 1983, 1993, 1995, 1998, and 2005.

A strong east to northeastern wind, known as the "Santa Ana Winds," begins throughout southern California in the fall and can occur at any time throughout the winter months. These "Santa Ana Winds" carry warm dry air from the deserts to the coast, dramatically increasing temperatures and decreasing relative humidity levels. These factors, combined with potentially strong winds, create the perfect environment for fire to initiate and spread.

B.4 Fire History

Otay Ranch is predominantly California shrubland, including coastal sage scrub, chaparral, and grassland communities in the uplands, with riparian habitat occurring along the narrow valley bottoms and streams. Mediterranean-climate shrublands are one of the most fire-prone landscapes in North America. The combination of dense, contiguous fuels, summer drought, dry winds, and an extensive urban/wildland interface contribute to this situation. Since at least the middle of the twentieth century, property losses from wildfires have increased every decade, despite the increase in fire suppression expenditures. The most common ignition source historically was lightning associated with storms. Man-caused ignitions are now responsible for most fires in southern California and have shifted the fire season to the drier late summer/early fall period when vegetation is driest.

Although wildfires pose a threat to human populations, fires are an important component of many ecological systems. In ecosystems such as the chaparral shrublands of California, fires have been a strong force guiding the evolution of local plant life and a constant regulator of ecological communities. Upon plant reproduction, many species drop seeds that remain dormant in the soil until fire creates favorable growth conditions. When the area burns, these seeds receive a number of signals that may cause them to germinate. In some species, smoke alone is sufficient to trigger seed germination, and thus, induce growth.

B.4.1 San Diego Wildfires of 2003[4]

The costs of fire suppression in southern California have continued to rise over the past several decades, and there have been increasing losses of property and human life due to wildfires. The multiple fires of late October 2003 burned over 300,000 acres in a single week. The flames were driven by the hot, dry winds, which burned through entire neighborhoods at points along the urban-wildland interface.

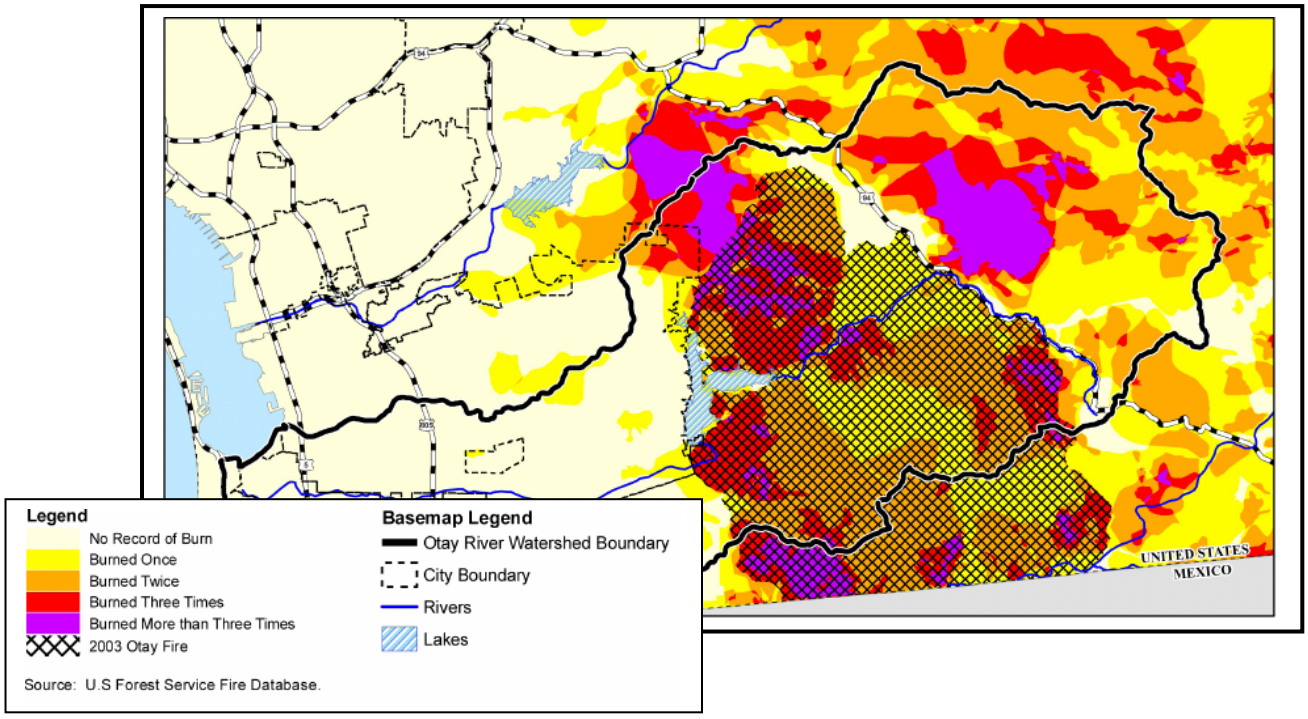
[4] Excerpt from the Otay River Watershed Management Plan adopted by the Board on May 10, 2006.

Within San Diego County, three fires, the Paradise, Otay, and Cedar Fires, broke out during the week of October 26, 2003. The Paradise Fire, located east-northeast of the City of Escondido, destroyed approximately 56,700 acres. This fire resulted in 24 injuries and two deaths, and destroyed over 400 structures and vehicles. The Otay Fire burned more than 46,000 acres in the area around the community of Otay Mesa. The Cedar Fire, considered to be the largest fire in the last several decades in California, started in Cleveland National Forest and burned over 273,000 acres. The Cedar Fire contributed to 113 injuries and 14 deaths, and damaged or destroyed over 2,800 homes, commercial properties, and other structures.

In addition to property and human loss, the 2003 wildfires had a significant effect on the vegetation communities and land covers of the region. Within Otay Ranch, the following land covers burned: Coastal sage scrub, Coastal sage scrub/Chaparral, Chaparral, Grassland, Riparian Scrub/Woodland/Forest, Woodlands, Montane Coniferous Forest, Meadow Marsh, and Open Water.

Given the fire-prone nature of these systems, fire-related effects are expected to be recurring in Otay Ranch, as they are throughout southern California. This includes the physical, biological, chemical, land-use, and socioeconomic effects associated with these fires, as well as the post-fire maintenance activities. As such, it will be important to consider the role and effects of fires and their intensity in Otay Ranch. As shown in Figure 11, the fire frequency has been particularly high for areas east of the Otay Lakes, which are mostly covered by chaparral and sage scrub habitat.

Figure 16 ***Fire Frequency for Areas East of Otay Lakes***



B.4.2 San Diego Wildfires of 2007

The San Diego wildfires of 2007 were a part of the October 2007 California wildfires that began burning across Southern California on October 20th. At least 1,500 homes were destroyed and over 500,000 acres (2,000 km²) of land burned from Santa Barbara County to the U.S.–Mexico border. Seven people died as a direct result of the fire; 85 others were injured, including at least 61 fire fighters.

The major contributing factors to the extreme fire conditions were drought in Southern California, hot weather, and unusually strong Santa Ana winds with gusts reaching 85 mph (140 km/h). Some of the fires were man-made. Several of the fires were triggered by fallen power lines.

San Diego County was the location of the two biggest fires by area burned. The largest, the Witch (Creek) Fire, burned a massive area north and northeast of San Diego. The second, the Harris Fire, burned northwest from the Mexican border towards San Diego. Officials feared the fires could become even more destructive than the 2003 Cedar Fire that burned 280,278 acres, 2,820 buildings (including 2,232 homes) and killed 15 people.

The Harris Fire burned in a northwest direction from its starting point at Harris Ranch Road near the community of Potrero. The fire approached eastern Chula Vista towards the communities of Bello Lago and Rolling Hills Ranch. Many communities were evacuated. The Harris Fire also affected northern Mexico, near the town of Tecate.

Figure 17 ***2003 and 2007 San Diego Wildfire Burn Perimeters***

B.5 Hydrology

Otay Ranch is located in the southwestern portion of the San Diego Planning Basin. The San Diego Basin has been divided into 11 hydrographic units and 54 hydrographic subunits (RWQCB 1975). The hydrographic divisions are based primarily on surface water drainage basins.

Most of the Otay Ranch property is located within the Otay Hydrographic Unit; however, the portion of Otay Ranch along Telegraph Canyon is within the Sweetwater Hydrographic Unit. The Otay Hydrographic unit is divided into the Otay Hydrographic Subunit to the west and the Dulzura Hydrographic Subunit to the east. The dividing boundary between the two subunits is a north-south line that corresponds with Savage Dam below Lower Otay Lake. The Dulzura Hydrographic Subunit is further divided into seven smaller hydrographic areas (RWQCB 1975).

C. Biological Resources

Phase 1 RMP provides a brief history of the survey work conducted on the 22,899-acre Otay Ranch. In 1986, under contract to the previous landowner (United Enterprises), Advanced Sciences, Inc. (ASI) completed botanical and zoological surveys of varying levels of detail on most of the Otay Ranch property. In 1989, the current landowner (Baldwin Vista Associates) engaged the services of Michael Brandman Associates (MBA) and RECON to conduct further detailed studies of the biological and cultural resources present on the site. MBA conducted surveys on the Proctor Valley parcel; RECON conducted surveys on the Otay River Valley and San Ysidro Mountains parcels. Initial studies conducted by MBA and RECON were completed in June 1989, and were reviewed and updated incorporating the results of field work completed in 1990 and 1991. Dudek & Associates, Inc. (DUDEK) was retained to conduct a thorough analysis of the flora and hydrology of vernal pools present on the entire Ranch (1990-1991). The vernal pool study was a requirement of the Phase 2 RMP. Detailed reports were submitted to the City and County by DUDEK, MBA and RECON as part of the GPA application. These reports, included as appendices Phase I RMP, include the following:

- Biological Resources Inventory Report for the Otay Ranch Property (RECON 1989, with 1991 update).
- Biological Resources Survey Report, Otay Ranch - Proctor Valley Area, San Diego County, California (MBA 1989).
- Sensitive Plant Species Survey Report, Otay Ranch - Proctor Valley/Jamul Mountains Area, San Diego County, California (MBA 1990).
- Botanical Resources Report for the Otay Ranch Property, Rare Plant Survey Results, Spring, 1990 (RECON 1990).
- Report on the Hydrology and Flora of the Otay Ranch Vernal Pools, 1990, San Diego County, California (DUDEK 1992). (A technical study required for the Phase 2 RMP).

- Baldwin Otay Ranch Wildlife Corridor Study: Phase 1 Report (Ogden 1992). (Preliminary results of a comprehensive technical study required for Phase 2 of the RMP).
- Baldwin Otay Ranch Raptor Study (Ogden 1992)
- Responses to "Data Gaps" Identified by the Otay Ranch Biological Subcommittee (DUDEK 1991). (Required for the Otay Ranch Program EIR).

Habitats within Otay Ranch include:

Sage Scrub Communities
Diegan coastal sage scrub (CSS)
Disturbed Diegan CSS
Maritime succulent scrub

Chaparral Communities
Chamise chaparral
Southern mixed chaparral

Floodplain Scrub
Baccharis scrub
Baccharis floodplain scrub
Tamarisk scrub

Grassland Meadow
Valley needlegrass grassland
Disturbed valley needlegrass grassland
Alkali meadow
Disturbed alkali meadow
Non-native grassland

Woodlands (Upland + Riparian)
Coast live oak woodland
Southern coast live oak riparian forest
Sycamore alluvial woodland
Southern interior cypress forest
Southern willow scrub

Marshes & Aquatic Habitat
Coastal & valley freshwater marsh
Aquatic

Other
Eucalyptus
Agriculture
Developed

The Preserve includes portions of all of the native habitat types currently known from Otay Ranch. Nearly all of the existing acreage for the following habitats mapped on Otay Ranch will be preserved within the Preserve: southern interior cypress forest, coast live oak woodland, coast live oak riparian forest, sycamore alluvial woodland, coastal and valley freshwater marsh, baccharis scrub, eucalyptus woodland, and perennial aquatic habitats. Nearly all of three degraded wetland habitat types - baccharis scrub, baccharis floodplain scrub, and tamarisk scrub - also will be included within the Preserve in the Otay River corridor.

Additional limited wetland and aquatic habitat types may be present within Otay Ranch, but were not mapped in 1989. These areas will be the subject of future wetland delineation studies for each Specific Plan Area.

C.1 Native Community Types

C.1.1 Diegan Coastal Sage Scrub

Coastal sage scrub is a drought-adapted community typically dominated by sparsely distributed semi-deciduous shrubs and subshrubs, with a diverse understory of annual forbs and perennial grasses. It frequently occurs on the driest slopes alternating with perennial (native) grassland. In San Diego County it is a widespread and fairly diverse plant community, extending from near the coast to about 2,000 feet elevation. According to Oberbauer (1991), coastal sage scrub has been reduced by 69 percent of its former

coverage in San Diego County. Because many sensitive plant and wildlife species are restricted to this community, and because of its reduction in acreage, coastal sage scrub is considered a sensitive community. Both Diegan coastal sage scrub and disturbed coastal sage scrub are located within Otay Ranch.

The Preserve encompasses the richest and most diverse portions of this habitat type, including the Salt Creek area, the lower Proctor Valley area, the lower slopes of the San Ysidro Mountains, much of the Jamul Mountains block, and most of Poggi and Wolf canyons. Coastal sage scrub within the Preserve provides habitat for numerous sensitive plant species and constitutes habitat for a viable population of California gnatcatchers that includes between 120 and 130 pairs. In addition, this habitat provides vital linkages to adjacent habitat offsite, much of which also supports sensitive native plants and gnatcatcher populations. Over 75 percent of the coastal sage scrub habitat mapped during the 1989 biology surveys that contained substantial concentrations of sensitive plant and wildlife species is included within the Preserve.

C.1.2 Maritime Succulent Scrub

Maritime succulent scrub is a highly restricted type of coastal sage scrub that is confined primarily to south-facing slopes in coastal areas from about Torrey Pines south to El Rosario, Baja California. It is similar to Diegan coastal sage but contains a rich mixture of stem and leaf succulents such as Dudleya, Opuntia, Mammalaria, Euphorbia, Bergerocactus, Simmondsia, Cleome, and Ferocactus. According to Oberbauer (1991), this community has been reduced by approximately 92 percent in San Diego County, hence, it is considered a rare and sensitive habitat type. Maritime succulent scrub primarily occurs in the Salt Creek and Poggi Canyon areas of Otay Ranch. This community is the primary habitat for the San Diego cactus wren.

C.1.3 Chaparral

Chaparral is a fire-adapted, Mediterranean-type community characterized by dense stands of shrubs with small sclerophyllous leaves. It frequently occurs on steep, north-facing slopes. Although coastal mixed chaparral (or maritime chaparral) has been reduced considerably in San Diego County, southern mixed chaparral and chamise chaparral have been reduced by only 6.5 and 22.1 percent, respectively (Hix 1990). Hence, these communities are not regarded as particularly sensitive at present. Many of the plant and wildlife species that occur in chaparral also occur in coastal sage scrub. Sensitive plants that occur primarily in this community onsite include Otay manzanita (Arctostaphylos otayensis), Southern mountain-misery (Chamaebatia australis), San Miguel savory (Calamintha chandleri), Dunn's mariposa lily (Calochortus dunnii), Gander's pitcher-sage (Lepechinia ganderi), narrow-leaved nightshade (Solanum tenuilobatum), and Munz's sage (Salvia munzii).

C.1.4 Oak Woodland

In southern California, oak woodlands are associated with more mesic conditions than the scrub communities described above. In riparian situations, coast live oak (*Quercus agrifolia*) typically forms a closed canopy woodland; on moist north-facing slopes, Engelmann oak (*Quercus engelmannii*) often forms more open savannah woodlands. Oak woodlands support a remarkably wide variety of wildlife species. The structural complexity of the habitat provides nesting, foraging, and hiding areas for many birds, mammals and reptiles. Oaks also support a rich and diverse insect fauna. One sensitive plant species - San Diego sagewort (*Artemisia palmeri*) - occasionally occurs in riparian oak woodlands, and one federal Category 2 candidate butterfly -Harbison's dun skipper (*Euphyes vestris harbisoni*) - occurs in riparian oak woodlands almost everywhere that San Diego sedge (*Carex spissa*) occurs (Brown 1981). According to Hix (1990), oak woodland has been reduced by 3.4 percent of its former coverage in San Diego County. It is considered a sensitive habitat because of its extraordinarily high wildlife value (Block, Morrison, and Verner 1990). In addition to providing valuable wildlife habitat, oak woodlands also may function as corridors for wildlife movement.

C.1.5 Southern Interior Cypress Forest

Southern interior cypress forest is dominated by the endemic Tecate cypress (*Cupressus forbesii*) and occurs within the southeastern portion of Otay Ranch within chaparral, on steep slopes, and in canyons of the San Ysidro Mountains. Tecate cypress occurs only in isolated populations throughout southern California, including the Santa Ana Mountains, Guatay Mountain, Tecate Mountain, and Otay Mountain, and in scattered locations in northern Baja California, Mexico. Populations of this cypress on Otay Mountain are the largest known. The extensive stands of Tecate cypress on and adjacent to Otay Ranch support the only known populations of the federal Category 2 candidate Thorne's hairstreak butterfly (*Mitoura thornei*) (Brown 1983). At the higher elevations of the property, the cypresses co-occur with other sensitive species, including southern mountain-misery (*Chamaebatia australis*), Otay manzanita (*Arctostaphylos otayensis*), Mexican flannelbush (*Fremontodendrom mexicana*), and Gander's pitcher-sage (*Lepechinia ganderi*). In places where the cypress forest extends into lower elevations along and within drainages, other sensitive plants species, such as San Diego marsh-elder (*Iva hayesiana*), spiny rush (*Juncus acutus* var. *sphaerocarpus*), and willowy monardella (*Monardella linoides*), co-occur with the cypress. The habitat immediately adjacent to the cypress forest near Jamul Creek at the east end of Lower Otay Reservoir, east of Borderlands Air Sport Center, supports at least two sensitive plant species - San Diego sunflower (*Viguiera laciniata*) and ashy spike-moss (*Selaginella cinerascens*) - and two sensitive butterfly species - Hermes copper (*Lycaena hermes*) and quino checkerspot (*Euphydryas editha quino*).

C.1.6 Sycamore Alluvial Woodland

Sycamore alluvial woodland is a moderately open, winter-deciduous, broad-leafed riparian woodland dominated by well spaced sycamores, with occasional willow and elderberry as a subcanopy (Holland 1986). It characteristically is found on wide, alluvial floodplains of intermittent streams and drainages with cobbly or bouldery substrates. This community occurs in the extreme southeastern portion of the San Ysidro Mountains block. All riparian woodlands are considered to represent high quality wildlife habitat. They are important sites of primary

productivity and play an important role in nutrient cycling and water quality maintenance. Seven acres of sycamore alluvial woodland were mapped during the MBA/RECON efforts, and all of this habitat will be included within the Preserve or within non-Preserve open space.

C.1.7 Southern Willow Scrub

Southern willow scrub is restricted to riparian areas and major drainages. This community is dominated by willows (Salix spp.), with occasional individuals of western sycamores (Platanus racemosa), mule fat (Baccharis salicifolia), and Mexican elderberry (Sambucus mexicanus). The structural diversity of this community provides foraging and nesting habitat for numerous species of birds, and the associated aquatic and semi-aquatic areas provide habitats for numerous fish, amphibians, reptiles, birds, mammals, and insects. A small area of this vegetation type occurs immediately south of Lower Otay Reservoir.

C.1.8 Perennial (Native) Grassland

Perennial (native) grassland or valley needlegrass grassland is dominated by native perennial grasses, including Nassella, Poa, Elymus, and Muhlenbergia (Hix 1990). The historical distribution of this habitat is poorly known, but there is no question that it has been reduced considerably in San Diego County. Native grasslands provide habitat for several birds, mammals, and insect species.

C.1.9 Otay Mesa Claypan Vernal Pools

Otay Mesa claypan vernal pool is a unique habitat type characterized by Mima mound topography forming a series of low mounds alternating with shallow depressions. The depressions are underlain by an impervious claypan that functions to retain rain water in the spring to form a perched water table. These ephemeral aquatic conditions support a unique flora and fauna highly adapted to the seasonally available water. Indicator species of vernal pool habitat include woolly marbles (Psilocarphus brevissimus), hyssop loose-strife (Lythrum hyssopifolia), Bigelow's plantain (Plantago bigelovii), water pygmy-weed (Crassula aquatica), and fairy shrimp (Branchinecta spp.). Also associated with vernal pools are the sensitive plant species Otay Mesa mint (Pogogyne nudiuscula), California Orcutt's grass (Orcuttia californica), little mousetail (Myosurus minimus var. apus), San Diego button celery (Eryngium aristulatum var. parishii), and San Diego navarretia (Navarretia fossalis). Vernal pool areas typically occur in a matrix of coastal sage scrub, chaparral, or grasslands. The two major areas of vernal pools found on Otay Ranch - the mesa south of the Otay River Valley east of Brown Field and the southwest corner of the Jamul Mountains block - are included in the Preserve.

C.2 Sensitive Plant Species[5]

A large number of sensitive plant species are present on Otay Ranch. Three species that are listed under both the state and federal endangered species acts as endangered have been recorded from the Ranch - San Diego button-celery (Eryngium aristulatum var. parishii), California Orcutt's grass (Orcuttia californica), and Otay Mesa mint (Pogogyne nudiuscula). The populations of Otay Mesa mint comprise greater than 90% of the southern California distribution of this species. Populations of San Diego button-celery are considerable, but are small compared to those on NAS Miramar. A single individual of California Orcutt's grass was reported several years ago and has not been observed since.

Three plant species listed by the state as endangered species have been recorded from the Ranch - San Diego thorn-mint (*Acanthomintha ilicifolia*), Otay tarplant (*Hemizonia conjugens*), and Willowy monardella (*Monardella linoides* ssp. *viminea*). Several candidate species (species listed as Category 1 or 2 under the fedral Endangered Species Act) or otherwise considered rare have been reported, including:

- Otay manzanita (*Arctostaphylos otayensis*)
- Orcutt's brodiaea (*Brodiaea orcuttii*)
- Dense reed grass (*Calamagrostis densa*)
- Dunn's mariposa lily (*Calochortus dunnii*)
- Slender-pod caulanthus (*Caulanthus stenocarpus*)
- Variegated dudleya (*Dudleya variegata*)
- San Diego barrel cactus (*Ferocactus viridescens*)
- Mexican flannelbush (*Fremontodendron mexicanum*)
- Gander's pitcher-sage (*Lepechinia ganderi*)
- Willowy monardella (*Monardella linoides* ssp. *viminea*)
- San Diego golden-star (*Muilla clevelandii*)
- Little mouse-tail (*Myosurus minimus* var. *apus*)
- San Diego navarretia (*Navarretia fossalis*)
- Snake cholla (*Opuntia parryi* var. *serpentina*).

Several species, including San Diego navarretia, little mouse-tail, Mexican flannelbush, snake cholla, and Dunn's mariposa lily, are represented by a few individuals or a few small populations. Others, such as San Diego barrel cactus, San Diego golden-star, variegated dudleya, and Otay tarplant, are either widespread throughout the ranch or represented by large localized populations.

[5] Changes in status of sensitive species will continue to occur as new information accumulates regarding their populations, distributions, and vulnerabilities. These changes may result in the listing of new species or in the elevation in status of candidate species. For some species, changes in status may require no additional action. For others, focused surveys on a SPA-by-SPA basis may be necessary; and for a few species, ranch-wide assessments may be necessary to provide more encompassing recommendations of specific management actions.

C.3 Sensitive Wildlife Species

Several wildlife species recognized as sensitive by the Wildlife Agencies are present on Otay Ranch. The State and Federally-listed least Bell's vireo (*Vireo bellii pusillus*) occurred historically in the Otay River Valley. Least Bell's vireo also was observed in 1989, 1990, and 1992 in the Dulzura Creek drainage adjacent to Otay Ranch east of the Lower Otay Lake, where it occurs in high densities. A large, regionally significant population of the California gnatcatcher (*Polioptila californica californica*), a species listed as threatened by USFWS, is present on the Ranch, concentrated in the Otay Valley parcel but distributed throughout coastal sage scrub on the ranch. Also present is the federally listed as endangered Quino checkerspot butterfly (*Euphydryas editha quino*).

Several candidate species (species listed as Category 1 or 2 under the federal Endangered Species Act), MSCP Covered Species, or otherwise considered rare have been reported, including:

- Bell's sage sparrow (*Aimophila belli belli*)
- Southern California rufous-crowned sparrow (*Aimophila ruficeps lambi*)
- California horned lark (*Eremophila alpestris actia*)
- San Diego black-tailed jack rabbit (*Lepus californicus bennettii)*
- Red-diamond rattlesnake *(Crotalus ruber ruber*)
- San Diego horned lizard (*Phrynosoma coronatum blainvillei*)
- Orange-throated whiptail lizard (*Cnemidophorus hyperythrus beldingi*)
- Hermes copper butterfly (*Lycaena hermes*)
- Thorne's hairstreak butterfly (*Mitoura thornei*).

In addition to Federally-recognized species, several California Department of Fish and Game "Species of Special Concern" have been reported from the Ranch, including golden eagle (foraging only) (*Aquila chrysaetos*), , burrowing owl (*Athene cunicularia*), , aand Cooper's hawk (*Accipiter cooperi*). Other sensitive bird species include cactus wren (*Campylorhynchus branneicapillus sandiegoensis*) and northern harrier (*Circus cyaneus hudsonius*). In contrast to the widely ranging raptor species, the cactus wren is highly restricted to cactus (*Opuntia* sp.) thickets in southern maritime scrub. The Otay Ranch population of this species represents a regionally significant resource. The Ranch provides extensive areas for raptor foraging, and represents habitat for mule deer, coyotes, bobcats, mountain lions, and numerous other wildlife species.

C.4 Otay Valley Parcel

The Otay Valley Parcel encompasses the Otay River Valley and the slopes to the north and south, Salt Creek, portions of Wolf Canyon and Poggi Canyon, and the mesa area south of the Otay River Valley. The Otay River Valley portion of this parcel includes a diversity of natural and disturbed habitats that function primarily as a large, continuous, topographically well defined region that includes riparian, coastal sage scrub, and grassland habitat. The region is likely to constitute a part of a larger regional corridor for wildlife movement between Lower Otay Lakes Reservoir/San Ysidro Mountains and natural habitat and open space to the west. Although much of the area within this portion of the preserve system is degraded, supporting non-native grassland and agriculture, the

main drainage (Otay River Valley) and the adjacent uplands support several sensitive plant species, including;

- San Diego marsh elder (*Iva hayesiana*)
- Spiny rush (*Juncus acutus* var. *sphaerocarpus*)
- San Diego sunflower (*Viguiera laciniata*)
- San Diego barrel cactus (*Ferocactus viridescens*)
- Coulter's matilija poppy (*Romneya coulteri*)
- Snake cholla (*Opuntia parryi* var. *serpentina*)
- Variegated dudleya (*Dudleya variegata*)
- Palmer's grappling-hook (*Harpagonella palmeri*)
- Ashy spike-moss (*Selaginella cinerascens*)

The lower portion of the floodplain has high potential for riparian habitat creation/restoration. The Salt Creek portion of the Otay River Valley parcel includes coastal sage scrub and a majority of the maritime succulent scrub habitat on the Ranch, both of which support numerous sensitive plant species, including:

- Ashy spike-moss (*Selaginella cinerascens*)
- San Diego sunflower (*Viguiera laciniata*)
- Otay tarweed (*Hemizonia conjugens*)
- San Diego barrel cactus (*Ferocactus viridescens*)
- Palmer's grappling hook (*Harpagonella palmeri*)
- Variegated dudleya (*Dudleya variegata*)
- Snake cholla (*Opuntia parryi* var. *serpentina*)

This portion of the parcel also supports large numbers:

- California gnatcatcher (*Polioptila californica californica*)
- Cactus wren (*Campylorhyynchus branneicapillus sandiegensis*)
- Sage sparrow (*Aimophila belli*)
- San Diego horned lizard (*Phrynosoma coronatum*)
- Orange-throated whiptail (*Cnemidoporus hyperythrus)*

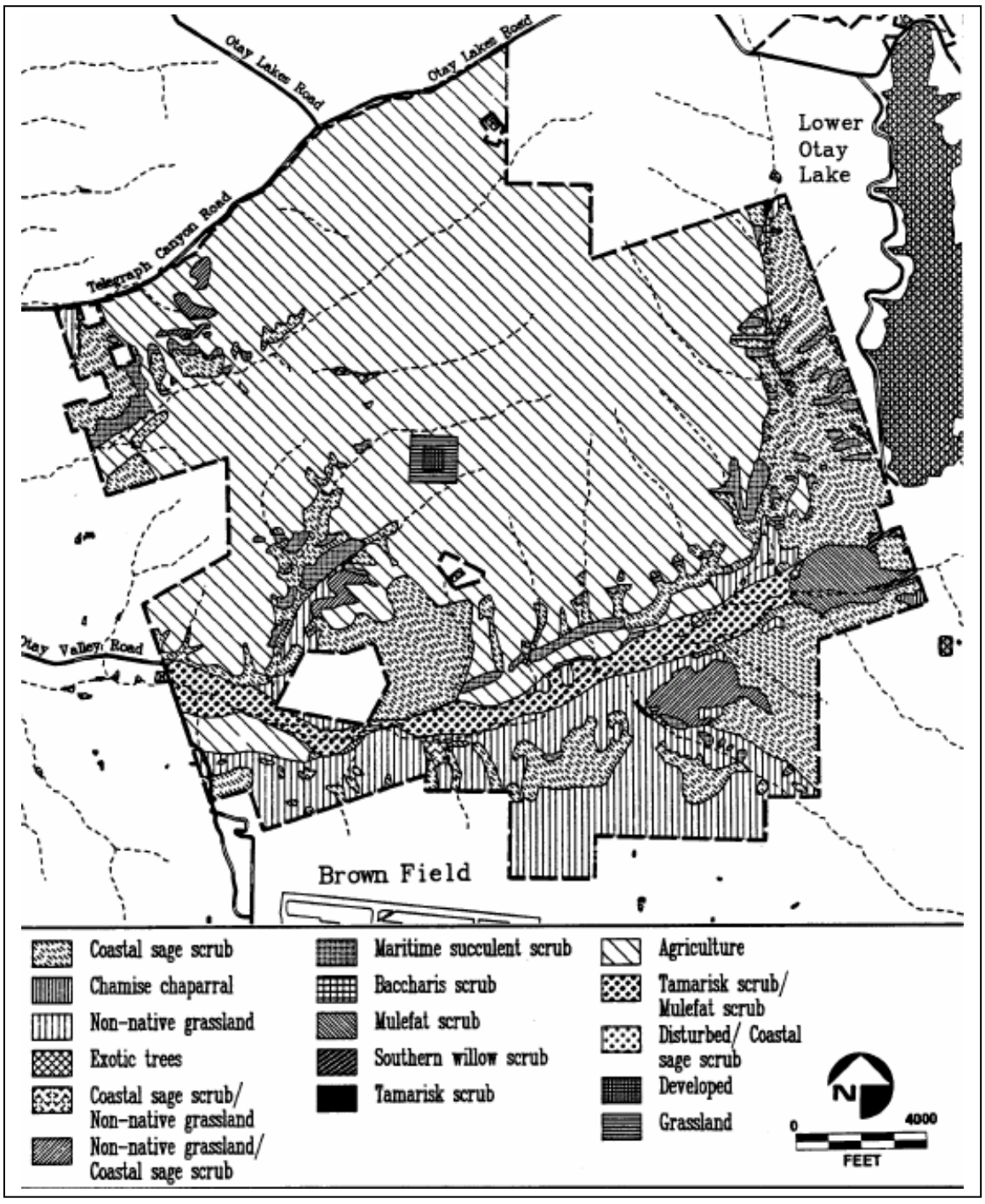
It also includes perches, nesting sites, and foraging territories for numerous raptors. Also included in this parcel is the extensive vernal pool system on the mesa south of the Otay River Valley. The pools support a variety of sensitive plants, including:

- San Diego button-celery (*Eryngium aristulatum* var. *parishii*)
- Otay Mesa mint (*Pogogyne nudiuscula*)
- The only populations of San Diego navarettia (*Navarretia fossalis*) known from the Ranch
- San Diego barrel cactus (*Ferocactus viridescens*)
- Ashy spike-moss (*Selaginella cinerascens*)
- Variegated dudleya (*Dudleya variegata*)
- San Diego sunflower (*Viguiera laciniata*)

The mesa area also provides potential habitat for the MSCP Covered Speices San Diego horned lizard (*Phrynosoma coronatum blainevillei*) and the federally listed as endangered Quino checkerspot butterfly (*Euphydryas editha quino*). Historically, the only known

Otay Ranch populations of California Orcutt's grass (*Orcuttia californica*) and dwarf pepper-grass (*Lepidium latipes*) occurred in this parcel.

Figure 18 ***Vegetation Communities in Otay Valley Parcel***



C.5 Proctor Valley Parcel

The Proctor Valley Parcel in the northern portion of the Ranch has valuable corridor linkages through Proctor Valley to the San Miguel Mountains, and from the Jamul Mountains to Otay Lakes and the San Ysidro Mountains. This 4,658-acre parcel surrounds a 745-acre parcel in the Jamul Mountains currently owned by the Bureau of Land Management (BLM). The Proctor Valley parcel encompasses extensive acreage of coastal sage scrub and some chaparral habitat supporting numerous sensitive plants, including:

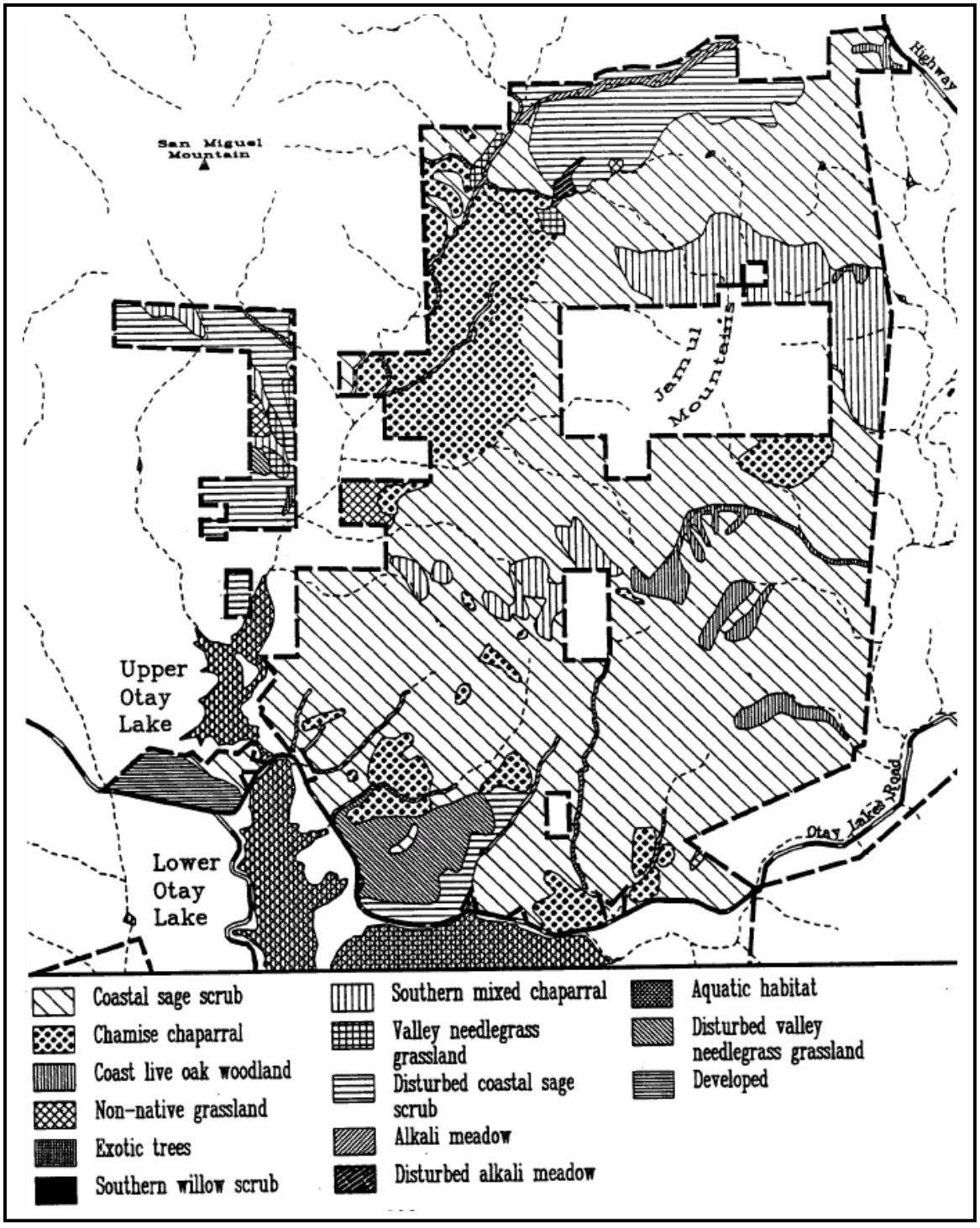
- Otay manzanita (*Arctostaphylos otayensis*)
- San Miguel savory (*Satureja chandleri*)
- Southern mountain-misery (*Chamaebatia australis*)
- Tufted pine-grass (formerly Dense reed grass) (*Calamagrostis koelerioides* formerly *C. densa*)
- Ashy spike-moss (*Selaginella cinerascens*)
- Engelmann oak (*Quercus engelmannii*)
- Munz's sage (*Salvia munzii*)
- Narrow-leaved night-shade (*Solanum tenuilobatum*)
- Otay tarweed (*Hemizonia conjugens*)
- San Diego golden-star (*Muilla clevelandii*)

The southwestern portion of the parcel includes an isolated mesa supporting vernal pools (K6). Sensitive species found on the mesa include:

- Variegated dudleya (*Dudleya variegata*)
- San Diego barrel cactus (*Ferocactus viridescens*)
- Ashy spike-moss (*Selaginella cinerascens*)
- San Diego sunflower (*Viguiera laciniata*)
- One of the few remaining San Diego County populations and the only known extant Otay Ranch populations of little mousetail (*Myosurus minimus* var. *apus*)
- San Diego horned lizard (*Phrynosoma coronatum blainvillei*)
- Quino checkerspot butterfly (*Euphydryas edita quino*)
- San Diego thorn-mint (*Acanthomintha ilicifolia*)

The Proctor Valley parcel provide habitat to help preserve California gnatcatchers (*Polioptila californica californica*) and includes areas in which mountain lion sign and raptor perches have been observed (MBA 1989).

Figure 19 ***Vegetation Communities in Proctor Valley Parcel***



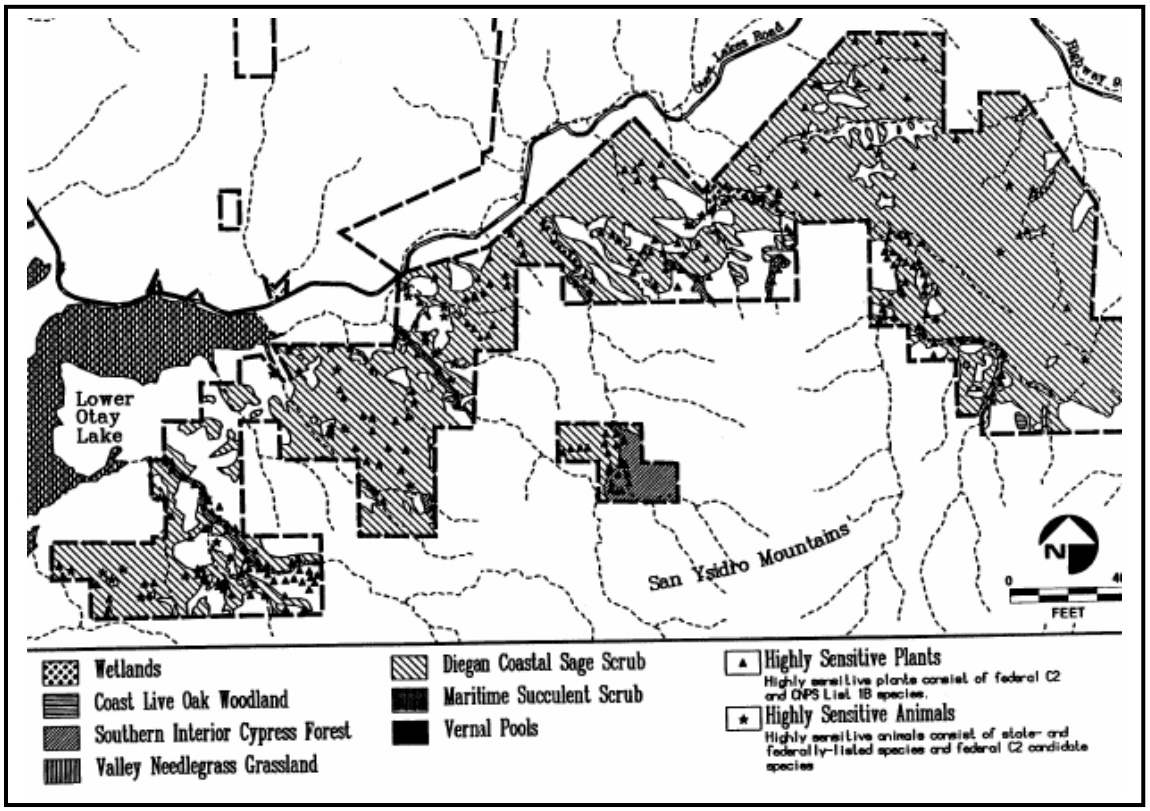
C.6 San Ysidro Mountains Parcel

The San Ysidro Mountains Parcel serve not only as high quality habitat but link the existing BLM wildlife management area with Otay Lakes and the rest of the Preserve system. This parcel contributes the greatest diversity of habitats of any of the parcels, and hence, represents a major contribution to the biodiversity of the preserve system. Included in the San Ysidro Mountains parcel are coastal sage scrub, southern mixed chaparral, sycamore alluvial woodland, coastal and valley freshwater marsh, and southern interior cypress forest. One of the most significant features of this parcel is the southern interior cypress forest dominated by the endemic Tecate cypress (*Cupressus forbesii*). This unique habitat supports a wide variety of sensitive plant and wildlife species including the sensitive butterfly Thorne's hairstreak (*Mitoura thornei*). Twenty-two sensitive plant species have been documented from this parcel, including:

- San Diego barrel cactus (*Ferocactus viridescens*)
- San Diego goldenstar (*Muilla clevelandii*)
- Variegated dudleya (*Dudleya variegata*)
- Otay manzanita (*Arctostaphylos otayensis*)
- Orcutt's brodiaea (*Brodiaea orcuttii*)
- Dunn's mariposa lily (*Calochortus dunnii*)
- Mexican flannelbush (*Fremontodendron mexicanum*)
- Gander's pitcher-sage (*Lepechinia ganderi*)
- Willowy monardella (*Monardella linoides* ssp. *viminea*)
- Narrow-leaved nightshade (*Solanum tenuilobatum*).

In addition, several sensitive wildlife species, including the California gnatcatcher (*Polioptila californica californica*) and San Diego horned lizard (*Phrynosoma coronatum blainvillei*), will be protected within the San Ysidro Mountains parcel.

Figure 20 ***Vegetation Communities in San Ysidro Mountains Parcel***



D. Cultural and Paleontological Resources

D.1 Cultural Resources

Phase 1 RMP includes existing cultural resources data for the Otay Ranch property assembled by Ogden, preparers of the Otay Ranch Program EIR. The information presented below is taken from the Cultural Resources Technical Report and the Draft Otay Ranch Program EIR. These documents provide more detailed information regarding cultural resources on Otay Ranch.

The Otay Ranch property includes a variety of natural habitats that provided a range of resources to prehistoric peoples. Different prehistoric site types and related resources occur in these natural areas. The several large drainages present on the property, such as the Otay River, Jamul Creek, and the Proctor Valley drainages, all contained prehistorically abundant floral and faunal resources providing food and materials for clothing and shelter. Such drainages, along with smaller creeks fed by natural springs, usually contain the highest density of prehistoric sites representing the most substantial occupations. Away from such drainages and springs, prehistoric sites are usually smaller, including temporary camps or resource procurement locations created during forays for specific purposes. Examples of such smaller sites include hunting camps, quarries, and other lithic procurement locations. Within the Otay Ranch property, the density and

nature of the prehistoric sites that have been located to date generally conform to this pattern. The considerable time span of prehistoric occupation in the area (8,000 years or more), however, enables considerable variations in site locations and types through time due to climatic variation and the associated fluctuations in the vegetation, fauna, and water availability (Ogden 1992).

Historic development of the project area began in the late 1700s with the arrival of the Spaniards in coastal California. Spain ruled the area until 1821 when the Mexican independence movement succeeded. From 1821 to the war with the United States in 1848, Mexico governed the area. Use of the land by the Spaniards was minimal at first, but during the 1800s and thereafter, the region gradually acquired more residents who implemented ranching and agricultural activities. Remnants of scattered homesteads, related outbuildings, corrals, and water diversion features can be found throughout the project area. The remaining larger ranch complexes are more recent (1930's - 1940's) and are located in the more western, less rugged portions of the project area (Ogden 1992).

The description of the cultural (archaeological and historic) resources of the project area that follows is derived from records and literature searches and from several confidential technical reports of cultural resource studies conducted on the property. The most important of these studies are an archaeological overview prepared in 1987 for the property by TMI Environmental Services (Berryman and Berryman 1987) and two large-scale surveys. One of the surveys, an initial planning survey conducted by RECON (Ritz and Bull 1990), while including the entire 23,008-acre property, did not intensively cover all areas. The RECON survey included a records search at the South Coastal Information Center at San Diego State University and at the Museum of Man to determine previously recorded sites located on the property; no literature search to determine previously surveyed areas was conducted as part of that survey. The second survey is an intensive ongoing survey and study conducted by ERCE of approximately 5,776 acres (Ogden 1992).

Several large areas of the property, approximately 17,000 acres, have not been intensively and systematically surveyed. Given that 292 prehistoric and historic sites have been recorded in the study areas that have been intensively surveyed, and that these sites represent a broad range of prehistoric and historic activities, it can be anticipated that at least 400-500 additional sites will be discovered during future surveys. Cumulatively, the research and interpretive potential of as many as 700-800 sites within Otay Ranch is unsurpassed in southern San Diego County. Of the 9,449 acres of the Otay Valley parcel, approximately 4,400 acres (i.e., 47 percent of the property) have been intensively surveyed for cultural resources. Of the 7,895 acres of the Proctor Valley parcel, approximately 1,500 acres (19 percent of the parcel) have been intensively surveyed for cultural resources. Only 200 acres (4 percent) of the 5,555 acres of the San Ysidro Mountains parcel have been intensively surveyed for cultural resources (Ogden 1992).

The various surveys conducted to date have been determined to be adequate for purposes of the Phase 1 RMP since the Phase 1 RMP is being processed concurrently with the

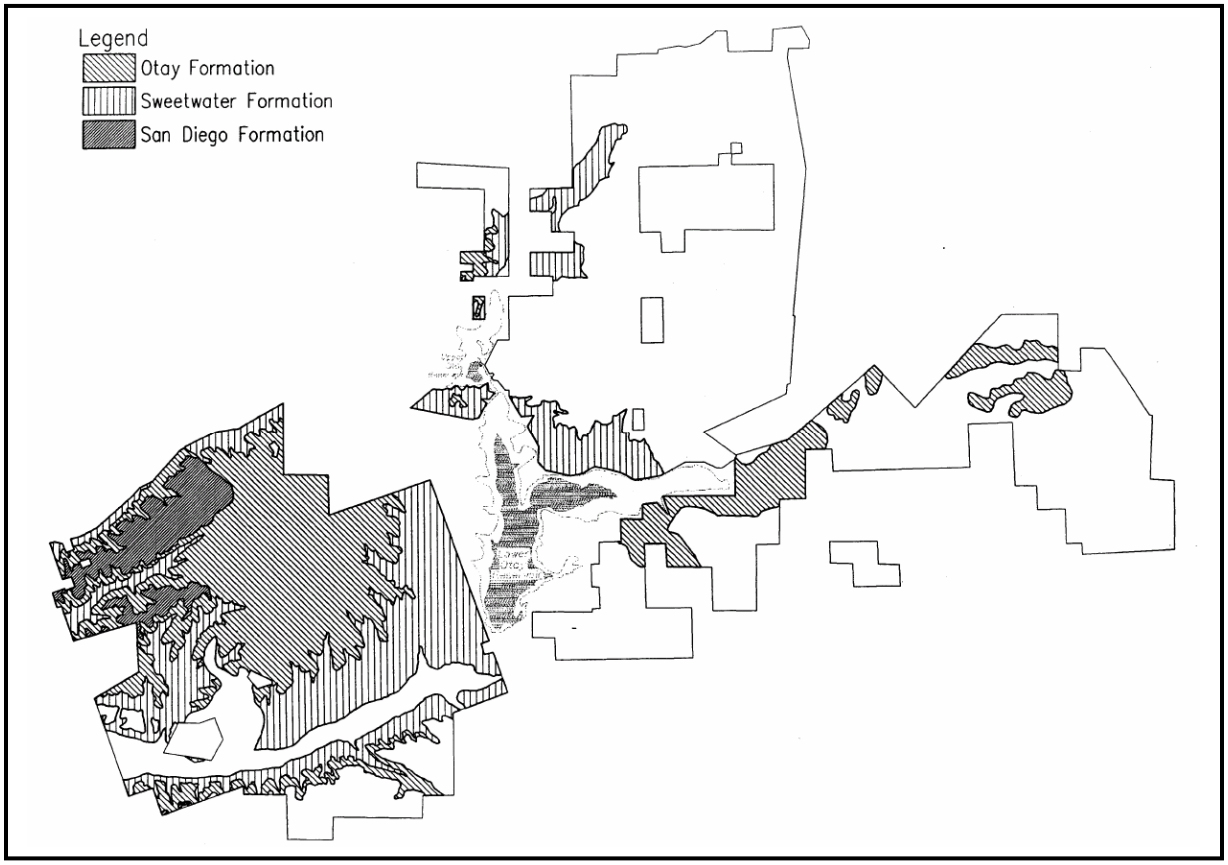
GPA for Otay Ranch and future discretionary actions will be required prior to development of the Ranch. As required by Policy 1.3 of the RMP, an intensive systematic survey of those portions of Otay Ranch that have not yet been investigated thoroughly will be completed prior to approval of the first SPA/Specific Plan within Otay Ranch.

Three resource categories are not addressed in the County RPO but contribute to the overall character of Otay Ranch. These resources - paleontological, agricultural and recreation resources - are described below.

D.2 Paleontological Resources

Data regarding paleontological resources present on Otay Ranch were obtained from studies completed in 1988 for the Chula Vista General Plan update and existing available geologic mapping. Information regarding paleontological sensitivity of various geologic formations was obtained from the San Diego Natural History Museum. Three formations onsite offer the greatest potential for fossil remains - the San Diego Formation and the Otay Formation and the Sweetwater Formation. The locations of these formations on the Otay Ranch property are illustrated in Figure 21.

Figure 21 ***Paleontologically Sensitive Formations***



The San Diego Formation is a marine sedimentary deposit that dates back to the middle or late Pliocene (approximately 2-3 million years ago). It is exposed throughout the Sweetwater/Bonita area between Interstate Highway 805 (I-805) and Long Canyon, the western portion of the Eastern Territories of the City, the eastern portions of Central Chula Vista, and the Montgomery area immediately adjacent to I-805. It has yielded extremely important fossil remains of many types of marine vertebrates (e.g., sharks, rays, bonyfishes, sea birds, walrus, fur seal, sea cow, dolphins, and baleen whales) and invertebrates (e.g., clams, scallops, snails, crabs, and sand dollars). In addition, the fossil remains of some terrestrial mammals, including cat, camel, deer, peccary, and horse, also have been recovered from the San Diego Formation.

The Otay Formation consists primarily of non-marine sedimentary rock dating from the Oligocene (approximately 27 million years old). It is exposed throughout the Eastern Territories west of Lower Otay Lake and along portions of the valley slopes in the Sweetwater/Bonita area. This formation is noted for its vertebrate fossil remains, including lizards, snakes, tortoises, birds, shrews, rodents, rabbits, dogs, foxes, rhinos, camels, and mouse deer. The Otay Formation is considered the richest source of late Oligocene terrestrial fossil vertebrates in California.

The Sweetwater Formation is a non-marine rock unit of Oligocene age (approximately 28-30 million years old). It consists of angular conglomerate, red-brown mudstone, gray-white sandstone, and red-brown gravelly sandstone. The formation attains its maximum thickness of about 210 feet in the area adjacent to Lower Otay Lake. Fossils are known only from the uppermost portion of the Sweetwater Formation as exposed at Eastlake. These fossils include the remains of terrestrial mammals such as oreodont, mouse deer and carnivores. The paucity of fossils in this formation probably is related to its mode of deposition (i.e., on a high energy alluvial fan).

E. Existing Land Uses

The majority of the Otay Valley Parcel is located within the City's jurisdiction with a small southern portion located within the City of San Diego and the unincorporated County. The Otay Ranch boundaries within the City consists of urban neighborhoods and newer master-planned communities. Otay Ranch contains a series of existing and planned future villages, blending neighborhoods and with parks, schools, and other civic facilities. The Otay Landfill is located on the western portion of Otay Ranch. The OVRP located along the Otay River has been identified in the Otay Ranch GDP/SRP and the County's and the City's MSCP Subarea Plans as a potential location for active recreational uses within the Otay River Valley. The eastern portion of Otay Ranch is intended to be the urban center for eastern Chula Vista area and will provide services to the broader South County subregion. This district will provide business, cultural, entertainment, and education services and residential development. A major transportation corridor aligned north-south, State Route 125, is located within this area.

Unincorporated County land to the east of Chula Vista (Proctor Valley and San Ysidro Mountains Parcels) is generally vacant and undeveloped.

F. Permitted Uses

Uses permitted within conveyed land must comply with the provisions of the Otay Ranch GDP/SRP. Seven broad categories of uses are permitted:

- open space, including preservation, recreation and education, study and research, and management of environmental resources;
- passive recreation;
- infrastructure consistent with approved GDP/SRP plans
- interim agricultural uses consistent with the Range Management Plan;
- active recreation (up to 400 acres consistent with the Otay River Valley Regional Park Plan);
- a university within the areas designated within the Otay Ranch General Development Plan Land Use Map, but excluding structures within the Salt Creek Canyon; and
- a Nature Interpretive Center.

The GDP/SRP allows certain uses in the Preserve. The POM will allow any and all of these uses within conveyed lands subject to the criteria and conditions of the GDP/SRP. This Phase 2 RMP designated the City and the County to act as the POM for a 30-year duration, to be reviewed every five years. During this period, the POM will sell, lease or gift areas of conveyed land to a third party for the purposes of pursuing any of these permitted uses, upon direction by the City and County. The City and County may consider designating such a third party as the POM for such conveyed areas and for such uses.

F.1 Existing and Planned Infrastructure

Phase 1 RMP, states infrastructure facilities can be located within the Preserve as long as they meet the outlined criteria.

Policy: Infrastructure may be allowed within the Preserve (final infrastructure plans may deviate from the conceptual locations as long as Preserve resources are not adversely affected) (RMP Policy 6.6).

Guidelines:

- Infrastructure facilities shall be sited and designed to minimize visual and other impacts to Preserve resources.
- Infrastructure plans and their implementation shall be subject to review and comment by the appropriate jurisdictions in coordination with the POM.
- CEQA mitigation requirements for impacts associated with infrastructure shall be reviewed by the appropriate jurisdictions and the POM if such improvements are located within the Preserve.

- When feasible, place infrastructure in roadways or outside the Preserve.
- Mitigation measures for facilities shall conform to restoration/mitigation proposals of the RMP.

As defined in the RMP, "infrastructure facility" is defined as a road, sewage, water, reclaimed water, or urban runoff facility. Figures 22 through 28 depict the potential locations of roads, sewage, water, reclaimed water, and urban runoff facilities which were updated during the preparation of Phase 2 RMP.

Figure 22 ***Conceptual Road Locations***

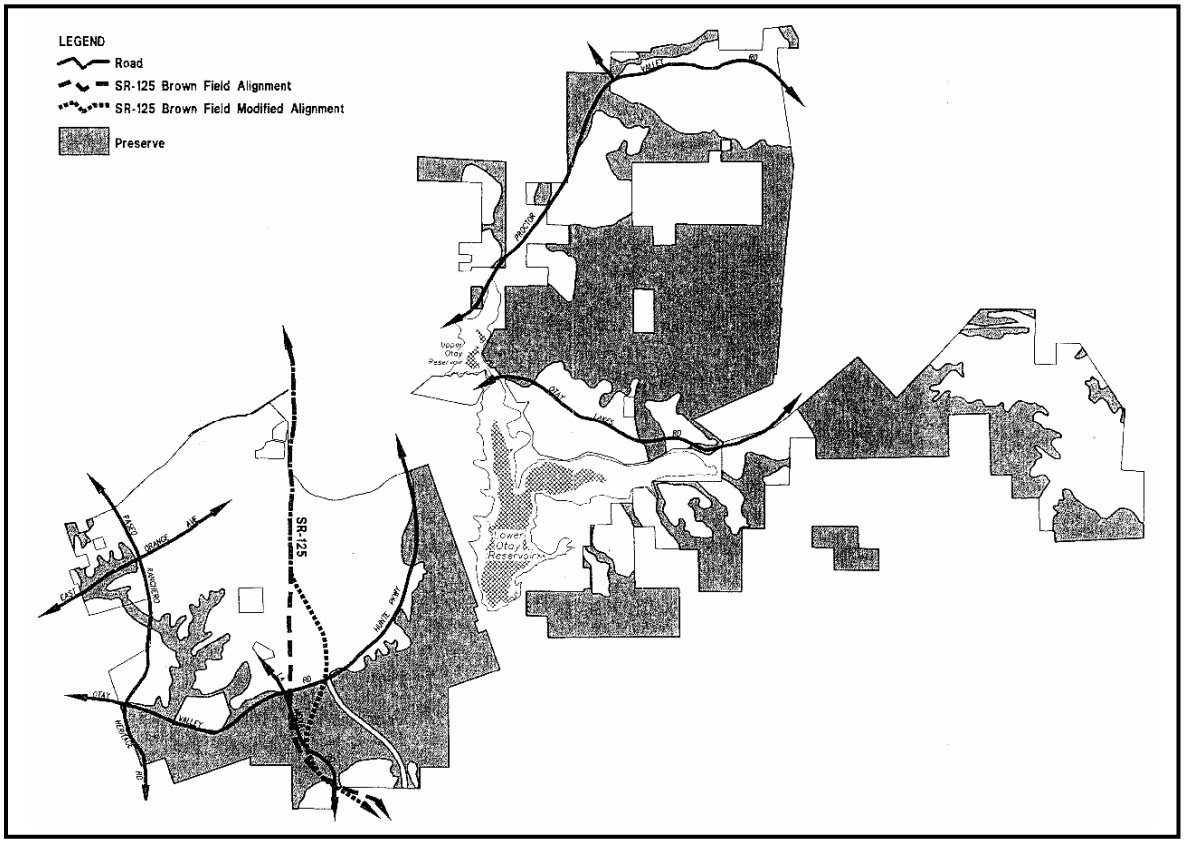


Figure 23 ***Conceptual Sewerage Facilities Locations***

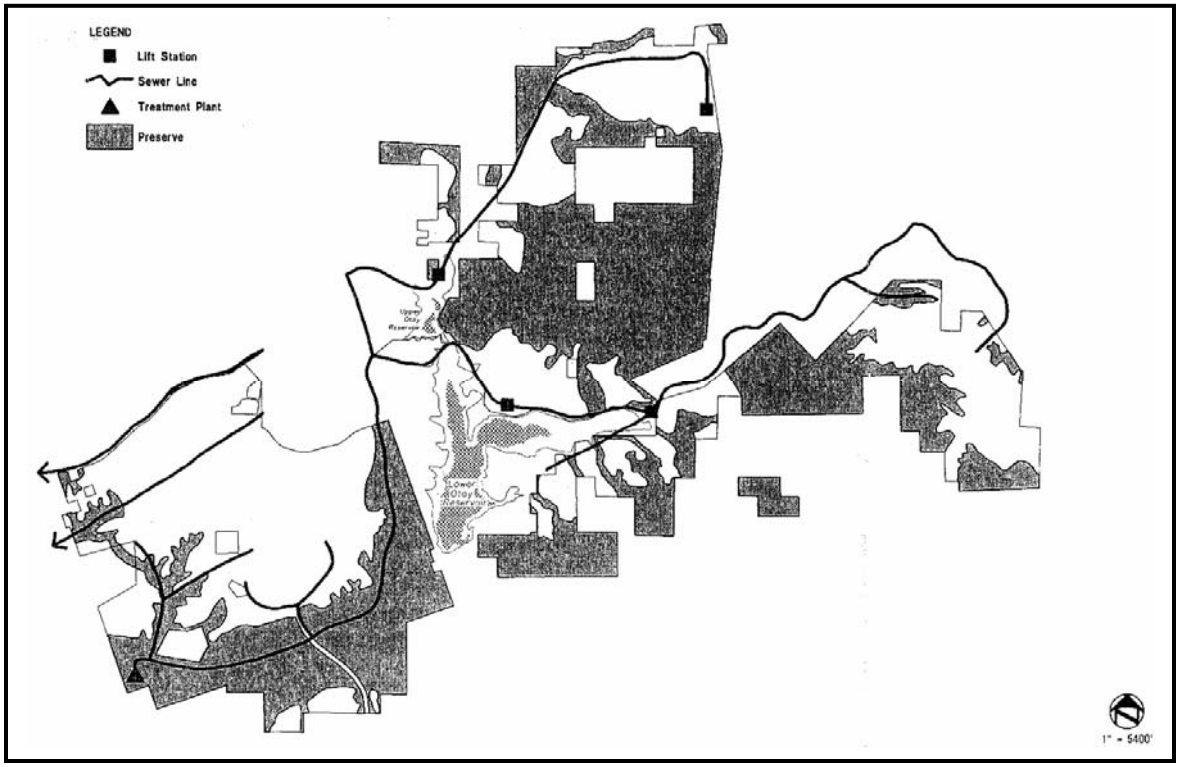


Figure 23 ***Conceptual Water Facilities Locations***

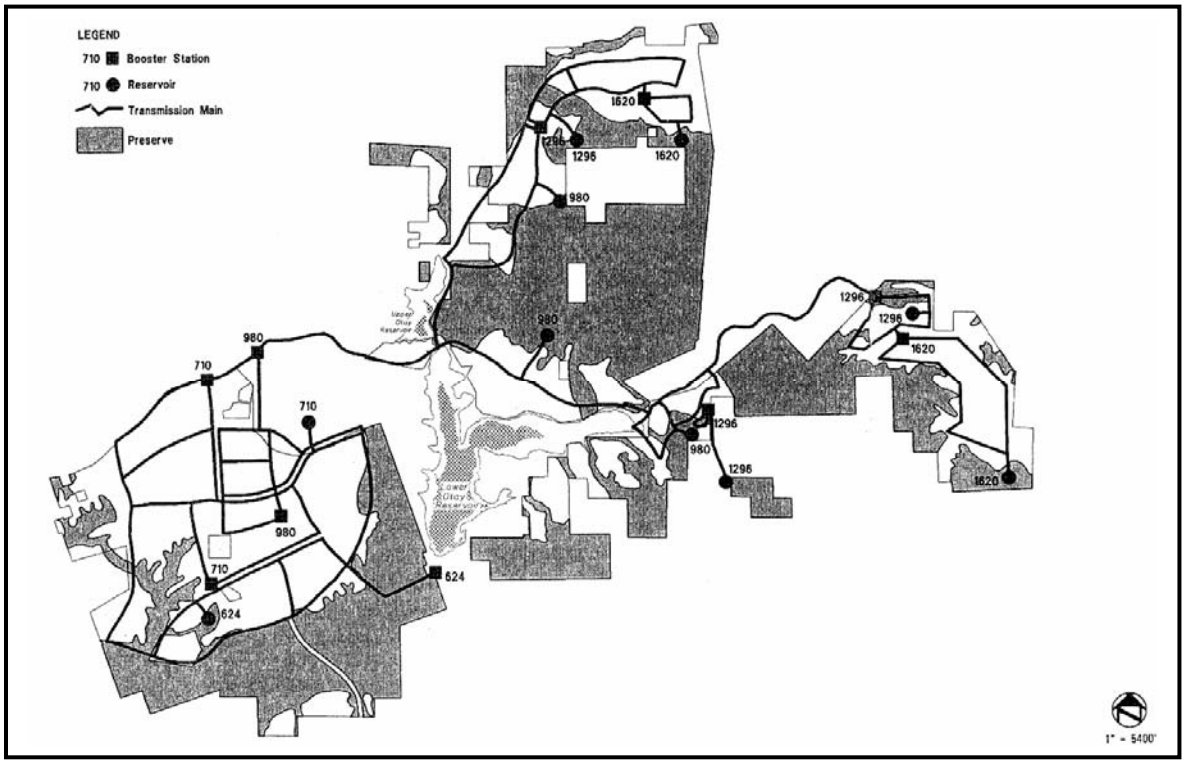


Figure 24 ***Conceptual Reclaimed Water Facilities Locations***

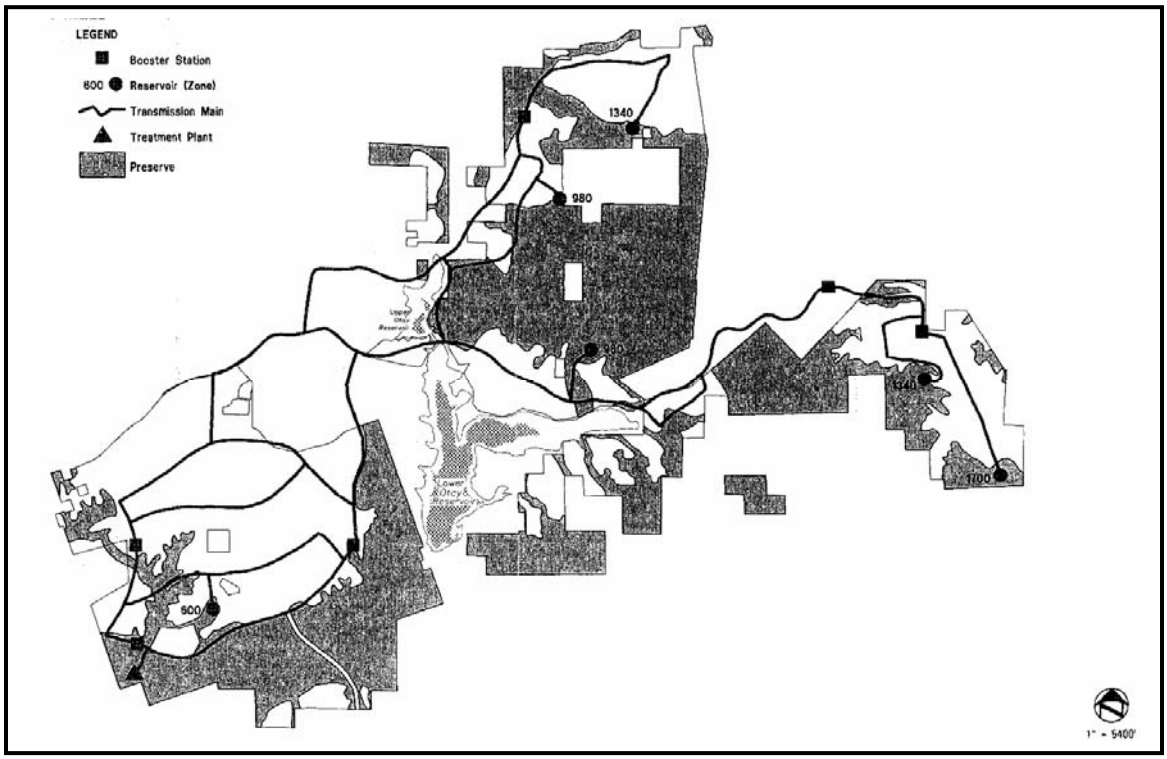


Figure 25 ***Conceptual Urban Runoff Facilities Locations***

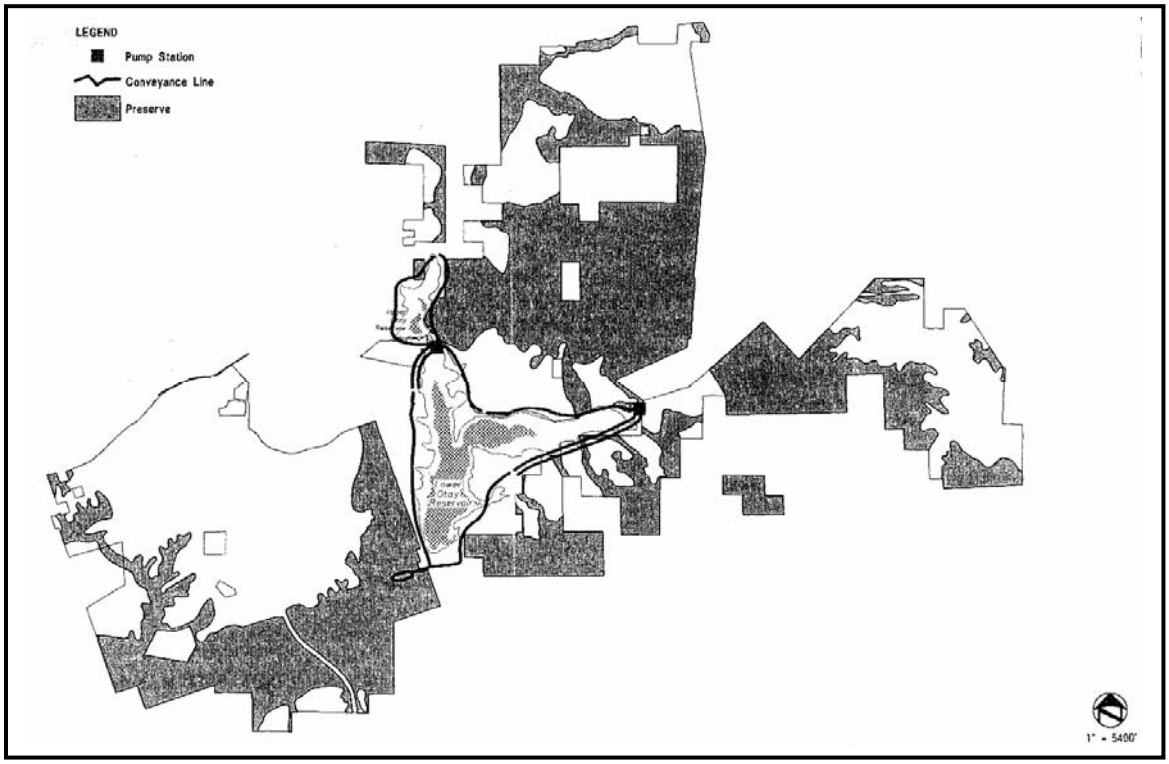
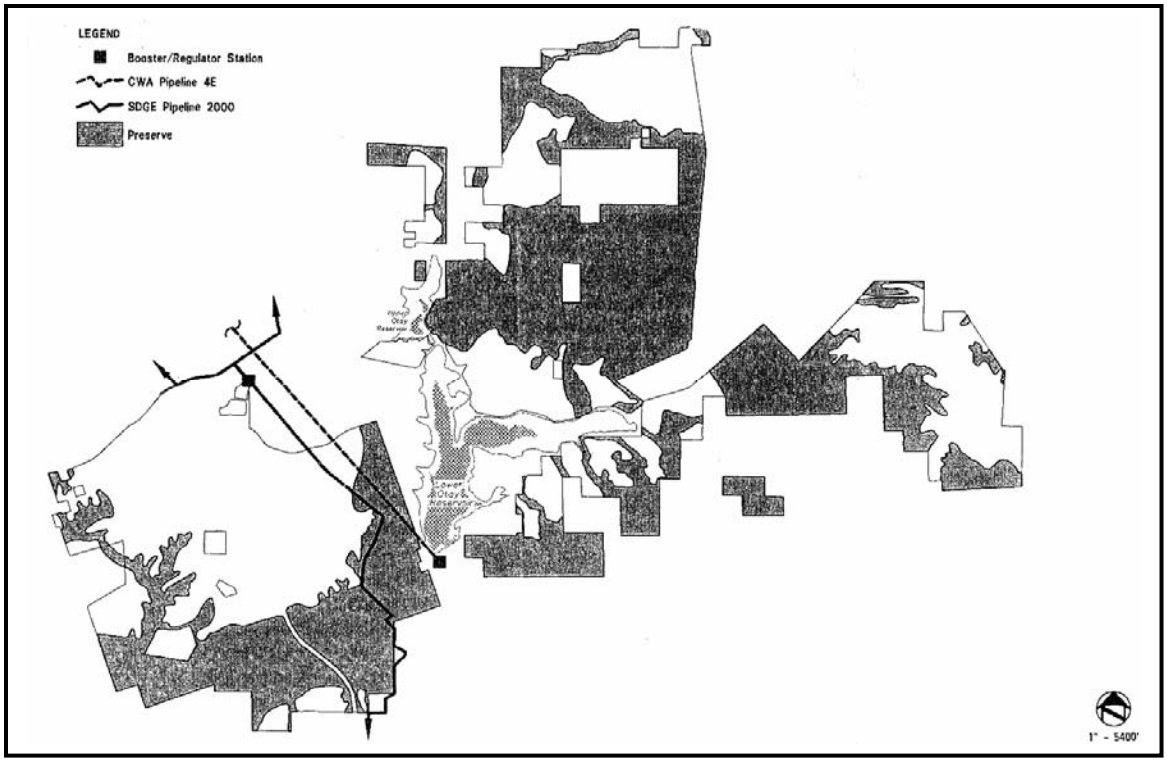


Figure 26 ***Conceptual Utility Corridors***



The locations of the infrastructure facilities referenced in the RMP and the Planned Facilities should be consistent in both the RMPs and the City's MSCP. Planned Facilities include those items described in Section 6.3.3 and Table 6-1 of the City's MSCP Subarea Plan (*Table 1*) to be located within the Preserve.

Table 1 ***City of Chula Vista MSCP Planned Infrastructure Facilities***

FACILITY	IMPLEMENTATION CRITERIA/ASSURANCE
Otay Lakes Road	• Siting of this facility is subject to the: a. Otay Ranch RMP Phase 1 Policy 6.6 and the RMP Infrastructure Plan, Section 6.0; and b. Otay Ranch RMP Phase 2 Conceptual Infrastructure Plan . • Take Authorization for the portions of this facility located outside the City will be pursuant to the County Subarea Plan, South County Segment. • If Otay Lakes Road is not excluded from the Cornerstone Conservation Bank Agreement, the Wildlife Agencies will require that any Take within the Cornerstone Lands resulting from construction of the road must be deducted from the available conservation bank credits.
Proctor Valley Road	• Siting of this facility is subject to the: a. Otay Ranch RMP Phase 1 Policy 6.6 and the RMP Infrastructure Plan, Section 6.0; and b. Otay Ranch RMP Phase 2 Conceptual Infrastructure Plan.

FACILITY	IMPLEMENTATION CRITERIA/ASSURANCE
Proctor Valley Road (continued)	• Siting of this facility is subject to the Rolling Hills Ranch SPA Plan and Tentative Map, which allow realignment of the City/County segment. • Take Authorization for the portions of this facility located outside the City will be pursuant to the County of San Diego Subarea Plan, South County Segment. • If Proctor Valley Road is not excluded from the Cornerstone Conservation Bank Agreement, the Wildlife Agencies will require that any Take within the Cornerstone Lands resulting from construction of the road must be deducted from the available conservation bank credits.
Otay Valley Road (will become Main Street)	• Siting of this facility is subject to the: a. Otay Ranch RMP Phase 1 Policy 6.6 and the RMP Infrastructure Plan, Section 6.0 (Appendix D); and b. Otay Ranch RMP Phase 2 Conceptual Infrastructure Plan (Appendix E). • Take Authorization Otay Valley Road (which will be renamed "Main Street") will be extended easterly to connect to Rock Mountain Road. • That portion of the Otay Valley Road originally designed to continue easterly from Rock Mountain Road to SR 125 will be subject to further evaluation, and separate Take Authorization. Take Authorization for that portion is not provided through this Subarea Plan. The City will evaluate the potential to relocate that portion of the facility outside the Preserve and/or remove that portion of the facility. If the City determines, after full evaluation, that all or (a) portion(s) of the road may be eliminated from the Preserve, the City will amend the Otay Ranch GDP accordingly and/or incorporate such design changes into the final design of the facility, as appropriate.
La Media Road	• Siting of this facility is subject to the: a. Otay Ranch RMP Phase 1 Policy 6.6 and the RMP Infrastructure Plan, Section 6.0; and b. Otay Ranch RMP Phase 2 Conceptual Infrastructure Plan. • Take Authorization for the portions of this facility located outside the City will be pursuant to the City of San Diego or County of San Diego Subarea Plans. • The data developed and analysis completed related to La Media Road as part of the SR 125 corridor study will be considered during siting analysis and CEQA review, as appropriate. • La Media Road will be a permitted use under the Take Permit authorized by this Subarea Plan. It is recognized that the City will seek a Section 404 permit, triggering consultation with the Federal agencies. In addition, the City commits to work jointly with the Wildlife Agencies during CEQA review for the project to identify an alignment of the road which results in the least adverse impact to sensitive resources feasible. The City will apply a standard of no-net-loss for mitigation of impacted Wetlands under CEQA review.

FACILITY	IMPLEMENTATION CRITERIA/ASSURANCE
La Media Road (continued)	• Although the siting of La Media Road has not yet been finalized: a. The Wildlife Agencies have reviewed the tentative alignment and have concluded that if impacts to covered Narrow endemic Species cannot be avoided as a result of the final alignment La Media Road, the City may purchase one acre of expanded Otay Ranch Tarplant Preserve land on the San Miguel Ranch; and b. The Wildlife Agencies concur that purchase of said property for inclusion into the San Miguel Ranch Otay Tarplant Preserve or other equivalent Otay tarplant Preserve land acceptable to the Wildlife Agencies will constitute equivalency for impacts to Narrow Endemic Species resulting from the final alignment of La Media Road. • Alternatively, the City may mitigate potential impacts pursuant to Section 5.2.3 of this Subarea Plan.
Paseo Ranchero	• Siting of this facility is subject to the: a.Otay Ranch RMP Phase 1 Policy 6.6 and the RMP Infrastructure Plan, Section 6.0 (Appendix D); and b. Otay Ranch RMP Phase 2 Conceptual Infrastructure Plan (Appendix E). • Paseo Ranchero will be a permitted use under the Take Permit authorized by this Subarea Plan. It is recognized that the City will seek a Section 404 permit, triggering consultation with the Federal agencies. The City will apply a standard of no-net-loss for mitigation of impacted Wetlands under CEQA review.
Alta Road	Take Authorization for Alta Road is not provided through this Subarea Plan. Alta Road will be subject to a separate permitting process for receiving Take Authorization.
Rock Mountain Road	Siting of this facility is subject to the: a. Otay Ranch RMP Phase 1 Policy 6.6 and the RMP Infrastructure Plan, Section 6.0 (Appendix D); and b. Otay Ranch RMP Phase 2 Conceptual Infrastructure Plan (Appendix E).
Mount Miguel Road	Mount Miguel Road will be subject to the conditions of the San Miguel Ranch MSCP Annexation Agreement described in Section 7.5.6.4 of this Subarea Plan.
Rolling Hills Ranch; (Two-lane road)	The two-lane road in Rolling Hills Ranch connecting Neighborhoods 9 through 12 are provided Take Authority pursuant to this Subarea Plan and in consideration for the Conditions of Coverage for Rolling Hills Ranch as discussed in this Plan and specifically cited in Section 7.5.6.3.
Rolling Hills Ranch Road to Future 1296 Reservoir	This facility will be subject to mitigation pursuant to agreement between the OWD and the Wildlife Agencies.
Rolling Hills Ranch / Bella Lago roadway connections	Two road connections from Rolling Hills Ranch to Bella Lago are provided Take Authorization pursuant to this Subarea Plan and in consideration for the Conditions of Coverage for Rolling Hills Ranch and Bella Lago as discussed in this Plan and specifically cited in Sections 7.5.6.3 and 7.5.6.5.

FACILITY	IMPLEMENTATION CRITERIA/ASSURANCE
Southern Trolley Line	Take Authorization for the southern trolley line is not provided through this Subarea Plan. The southern trolley line will be subject to a separate permitting process for receiving Take Authorization.
Salt Creek Interceptor, Wolf Canyon Sewer and Otay Valley Trunk Sewer (and associated ancillary sewer facilities including, but not limited to, pump stations, connections and maintenance access roads)	• Siting of these sewer facilities is subject to the: a. Otay Ranch RMP Phase 1 Policy 6.6 and the RMP Infrastructure Plan, Section 6.0 (Appendix D); and b. Otay Ranch RMP Phase 2 Conceptual Infrastructure Plan (Appendix E). • BMPs will be used to design and maintain these facilities. • Sewer lines will be sited to avoid mitigation sites created as mitigation for other projects. • Maintenance access roads related to these sewer facilities will be sited to avoid to the maximum extent practicable impacts to Covered Species and habitats, including covered Narrow Endemic Species, pursuant to the Facilities Siting Criteria in Section 6.3.3.4 of this Subarea Plan. • Through Salt Creek where new maintenance access roads must be developed, road widths will be limited to 12 feet, within a 20-foot disturbance corridor. Through the Otay River Valley where existing unpaved roads will be utilized, road widths will be limited to 20 feet. Maintenance access roads will be constructed as follows: a. Access roads will be constructed of concrete-treated base (CTB) material with aggregate rock to minimize frequency of maintenance. b. Where access roads exceed a 5% grade, concrete or asphalt may be permitted to ensure maintenance vehicle traction. c. Where cross-drainage occurs, concrete aprons may be permitted to minimize erosion. d. Appropriately sized concrete brow ditches on the uphill edge of access roads may be permitted to minimize erosion. • Temporary impacts related to these sewer facilities will be revegetated pursuant to Section 6.3.3.5 of this Subarea Plan. • Public access to finger canyons associated with the primary canyons involving these facilities will be limited, pursuant to the Otay River Valley Framework Management Plan, Section 7.6.3 of this Subarea Plan.
Otay River Valley Equestrian Staging Areas (located in the active recreation area(s))	• The equestrian staging areas will be subject to the Otay Ranch RMP Phase 1, Policies 6.2 and 6.3 (Appendix D). • Equestrian staging areas in the Otay River Valley must be sited within the active recreation areas. • A brown-headed cowbird trapping program for these equestrian staging areas will be established and implemented as part of the area-specific management directives for the Otay River Valley.
Trails designated in the OVRP Concept Plan	The trails designated in the OVRP Concept Plan are authorized for Take pursuant to this Subarea Plan, subject to the provisions of the City Planning Component Framework Management Plan, Section 7.5, the Public Access, Trails and Recreation guidelines, Section 7.5.3, and the Otay River Valley Framework Management Plan, Section 7.6.3

FACILITY	IMPLEMENTATION CRITERIA/ASSURANCE
Otay River Valley Interpretive Centers (located in the active recreation area(s))	• The Otay River Valley interpretive centers are authorized for Take pursuant to this Subarea Plan, subject to the Otay Ranch and 6.3 (Appendix D). • Interpretive centers in the Otay River Valley must be sited within the active recreation areas.

F.2 Otay Valley Regional Park Active Use Plan

The Otay Ranch GDP/SRP and Phase 1 RMP contain the following policy language regarding active recreational use:

> **Policy**: Active recreational use acreage within the Preserve shall not be greater than 400 acres and shall be consistent with the resource protection and enhancement goal, objectives and policies of the RMP, and reflect with the following criteria. (GDP/SRP Page 380; RMP Policy 6.2)
>
> **Criteria:**
> - Active recreation areas should be located in previously disturbed, non-sensitive areas.
> - Active recreational uses should be readily accessible from existing and planned public roads and should not intrude into core areas within the Preserve.
> - Active recreation uses should be clustered to minimize the extent of the edge between active recreation uses and sensitive resources within the Preserve.
> - Limited commercial uses/activities related to active recreation may be allowed within the 400 acres designated for active recreation.
> - Public parks and recreation facilities may be operated commercially by private operators within active recreation areas.
> - Emphasis shall be placed on providing the majority of the active recreation in the Otay Valley, to the extent that this is consistent with an OVRP Plan, as may be adopted.

Siting and design of active recreational uses shall be subject to review and comment by the POM in consultation with the JEPA of the OVRP and shall be consistent with plans for the OVRP when adopted.

F.3 Nature Interpretive Center Plan

The Nature Interpretive Center shall be designed to provide an educational opportunity to the public through providing a look at the natural history and ecology of the existing ecosystems, cultural history and paleontological resources on Otay Ranch. Design features for the Nature Interpretive Center shall include facilities that can accommodate

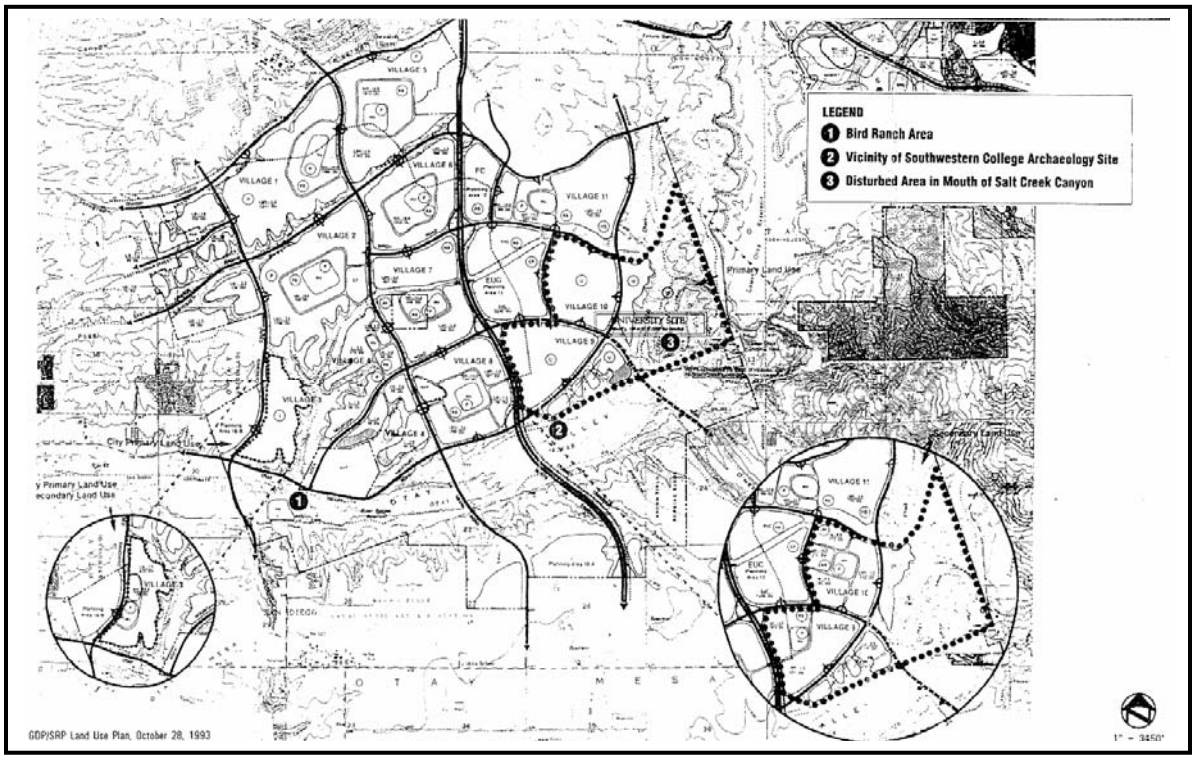
educational meeting and display rooms yet be in scale and compatible with the surrounding setting. A native plant nursery and/or botanic garden to be used for public education of native plants and plant communities and for restoration activities may also be constructed in conjunction with the Nature Interpretive Center. The sale of educational materials, books, and plants shall be allowed.

The Otay Ranch GDP/SRP and Phase 1 RMP contain the following policy language regarding a Nature Interpretive Center:

> **Policy:** As part of the Phase 2 RMP, identify the potential locations of a nature interpretive center within the Preserve. (GDP/SRP Page 378; RMP Policy 5.11)
>
> **Criteria:**
>
> - The Nature Interpretive Center should be located in a previously disturbed, non-sensitive areas.
> - The Nature Interpretive Center should be readily accessible from existing and planned public roads and should not intrude into core areas within the Preserve.
> - The design of the Nature Interpretive Center should be compact to minimize the extent of the edge between the Nature Interpretive Center use and sensitive resources within the Preserve.
> - Siting and design of the Nature Interpretive Center shall be compatible with the overall RMP goal of resource protection.
> - Trails associated with the Nature Interpretive Center shall be designed in accordance with Policy 6.3 of the RMP.

Based on the policies and criteria above, Figure 28 identifies three potential sites for the Nature Interpretive Center.

Figure 27 ***Potential Sites for the Nature Interpretive Center***



F.4 Trails

The Otay Ranch GDP/SRP and Phase 1 RMP contain the following policy language regarding trails:

Policy: Provide a system of trails through the Preserve that is compatible with resource protection. This is considered to be a passive use and not a part of the 400-acre active recreational area (GDP/SRP Page 381, RMP Policy 6.3).

Implementation Measure: A qualified firm shall be hired to design, implement and construct a trail system through the Preserve, following review and comment by the POM and resource agencies.

Guidelines:

- Site and design trails to be compatible with resource protection.
- Provide interpretive signs.
- Link Otay Ranch trails system with local community trails and regional trails systems, including trails such as those associated with the OVRP.
- Identify trail access points to the Preserve (e.g., parking lots and staging areas) that are consistent with resource protection goals.
- The POM may establish appropriate daily and seasonal limits on trail use in consultation with the appropriate jurisdictions.

- Assure that the type, width, and intensity of trail uses is consistent with protection of resources being traversed.
- Coordinate trail plans to link with trails planned for BLM property.
- Provide limited equestrian trails in non-sensitive areas.
- Wherever possible, use existing dirt roads for the trail system.
- Provide bicycle trails only in areas that have no environmentally sensitive resources.
- Design bicycle pathways in a manner that strongly discourages intrusion into adjacent environmentally sensitive areas.
- Coordinate bicycle trails development with the City's Greenbelt system.

The trail system through the Preserve will be closely coordinated with the OVRP Joint Exercises or Powers Agreement participants including the City, County, and the City of San Diego. Public access may be restricted within and adjacent to wetlands, vernal pools, restoration areas, and sensitive wildlife habitat (e.g., during breeding season) at the discretion of the POM.

F.5 Motorized Vehicles

The Otay Ranch GDP/SRP and Phase 1 RMP contain the following policy language regarding motorized vehicles (GDP/SRP Page 382, RMP Policies 6.3):

Policy: Motorized vehicular access by the public to the Preserve shall be restricted.

Standards:

- Motorized vehicular use within the Preserve shall be restricted to activities necessary for Preserve operation and maintenance and fire control.
- Motorized vehicular use within the Preserve shall be restricted to roadways within the Preserve.
- Where existing easements and other ingress/egress documents allow motorized access, such access shall be permitted but shall be restricted to the documented easement holder.
- Motorized vehicular use associated with construction shall be permitted consistent with resource protection.
- Off-road vehicles shall be prohibited.
- Motorized vehicle use for emergency access shall be permitted. Fire roads shall be permitted within the Preserve only where absolutely necessary to assure public safety and control wildfires that may damage biological resources.

III. MANAGEMENT ELEMENTS AND GOALS

A. Biological Monitoring Element

The Otay Ranch GDP/SRP and Phase 1 RMP contain the following policy language regarding biological monitoring:

> **Policy:** Establish a comprehensive monitoring program for the biota of the Preserve in conjunction with the Phase 2 RMP. (GDP/SRP Page 375; RMP Policies 5.4, 5.5)
>
> **Standard:** Develop and implement an annual monitoring program designed to identify changes in quality and quantity of onsite biological resources, including sensitive wildlife species, sensitive plant species, and sensitive habitat types, consistent with the following guidelines:

- Monitoring shall include, but not be restricted to, focused surveys and population estimates for state- and federally-recognized plants and wildlife species, use of wildlife corridors, and assessments of habitat quality.
- Annual monitoring reports summarizing the results of monitoring efforts shall be submitted to the City, County, and resource agencies.
- Based on the monitoring reports, the City, County, and resource agencies shall evaluate RMP performance, and, if necessary, recommend program modifications.
- Monitoring programs shall include performance standards.
- Habitat restoration efforts shall be monitored.
- Monitoring of the Preserve's sensitive resources may be integrated with mitigation monitoring and reporting programs (MMRPs) carried out in accordance with the CEQA review of individual developments within Otay Ranch.
- The Preserve's monitoring program shall be submitted with the Phase 2 RMP Biota Monitoring Program with input from the POM.

The SPA One applicant has addressed the performance of these policies and standards through the preparation of the "Biota Monitoring Program," Dudek, 1995. This report is Appendix F11 of Phase 2 RMP. The key components of the plan are summarized below.

Monitoring requirements for different habitats and different species vary. For this reason, differing and flexible monitoring requirements are recommended. It is important to understand that as the biota of the Preserve changes, either by natural succession of vegetation communities or specific environmental perturbations such as fire, flood, drought, etc., changes in the monitoring program will probably be necessary.

Table 2 lists the Otay Ranch biological resources which are the focus of the monitoring program.

Table 2 ***Biological Resources to be Monitored***[6]

Biological Resource	Percent
Habitats	
Maritime Succulent Scrub	80
Floodplain Scrub, Southern Willow Scrub & Aquatic/Freshwater Marsh	95
Valley Needlegrass Grassland/Perennial Grassland	25
Alkali Meadow	72
Vernal Pools (large or high value & all others per policy 2.9 of RMP)	95
Vernal Pools (specified on Page 29 of EIR Findings of Fact)	100
Woodlands	100
Plant Species	
San Diego Thorn-mint (*Acanthomintha ilicifolia*)	95
San Diego County Stipa (Needle-grass) (*Achnatherum diegoensis*)	75
California Adolphia (*Adolphia californica*)	75
San Diego Bur-sage (*Ambrosia chenopodiifolia*)	75
Otay Manzanita (*Arctostaphylos otayensis*)	75
San Diego Sagewort (*Artemisia palmeri*)	75
Orcutt's Brodiaea (*Brodiaea orcuttii*)	75
Dense Reed Grass (*Calamogrostis densa*)	50
San Miguel Savory (*Calamintha chandleri*)	50
Dunn's Mariposa Lily (*Calochortus dunnii*)	100
Slender-pod Caulanthus (*Caulanthus stenocarpus)*	100
Southern Mountain Misery (*Chamaebatia australis*)	50
Fallbrook Spine-flower (*Chorizanthe procumbens* var. *albiflora*)	50
Campo (Delicate) Clarkia (*Clarkia delicata*)	75
Summer-holly (*Comarostaphylos diversifolia* spp. *diversifolia*)	75
Orcutt's Bird's-beak (*Cordylanthus orcuttianus*)	75
Tecate Cypress (*Cupressus forbesii*)	75
Western Dichondra (*Dichondra occidentalis*)	50
Variegated Dudleya (*Dudleya variegata*)	75
San Diego Button-celery (*Eryngium aristulatum* var. *parishii*) (on-site)	95
San Diego Button-celery (where occurring with vernal pool species)	100
San Diego Barrel Cactus (*Ferocactus viridescens*)	75

[6] In some instances, the Phase 2 RMP preservation standard is different than the Otay Ranch Program EIR Findings of Fact standard. In all instances, the higher standard will be enforced.

Biological Resource	Percent
Mexican Flannelbush (*Fremontodendron mexicanum*)	100
Palmer's Grappling-hook (*Harpagonella palmeri* var. *palmeri*)	75
Otay Tarplant (*Hemizonia conjugens*)	70
San Diego Marsh-elder (*Iva hayesiana*)	75
Spiny Rush (*Juncus acutus* var. *sphaerocarpus*)	50
Gander's Pitcher-sage (*Lepechinia ganderi*)	75
Dwarf Pepper-grass (*Lepidium latipes*)	50
Willowy Monardella (*Monardella linoides spp. viminea*)	100
San Diego Goldenstar (*Muilla clevelandii*)	54
Little Mousetail (*Myosurus minimus* var. *apus*)	100
San Diego Navarretia (*Navarretia fossalis*)	100
California Adder's-tongue Fern (*Ophioglossum lusitanicum* spp. *californicum*)	50
Snake Cholla (*Opuntia parryi* var. *serpentina*)	75
Greene's Ground-cherry (*Physalis greenei*) (if present)	50
Otay Mesa Mint (*Pogogyne nudiuscula*)	95
Engelmann Oak (*Quercus engelmannii*)	50
Coulter's Matilija Poppy (*Romneya coulteri*)	50
Munz's Sage (*Salvia munzii*)	46
Ashy Spike-moss (*Selaginella cinerascens*)	50
Narrow-leaved Nightshade (*Solanum tenuilobatum*)	75
San Diego Sunflower (*Viguiera laciniata*)	75
Wildlife Species	
Cooper's Hawk (*Accipiter cooperii*)	NA*
Tricolored Blackbird (*Agelaius tricolor*)	100
Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)	75
Bell's Sage Sparrow (*Amphispiza belli belli*)	70-75
Golden Eagle (*Aquila chrysaetos*)	NA
Burrowing Owl (*Athene cunicularia*)	80-90
San Diego Vernal Pool Fairy Shrimp (*Branchinecta sandiegensis*)	95
Cactus Wren (*Campylorhynchus brunneicapillus*) (viable populations)	100
Northern Harrier (*Circus cyaneus*)	NA
Southwestern Pond Turtle (*Clemmys marmorata pallida*)*	100
Orange-throated Whiptail (*Cnemidophorus hyperythrus beldingi*)	60-70
Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	100

Biological Resource	Percent
Quino Checkerspot (*Euphydryas editha quino*)*	100
Harbison's Dun Skipper (*Euphyes vestris harbisoni*)*	100
Prairie Falcon (*Falco mexicanus*)	NA
Hermes Copper (*Lycaena hermes*)*	100
Thorne's Hairstreak (*Mitouri thornei*)*	100
San Diego Horned Lizard (*Phyrnosoma coronatum blainvillei*)	60-70
California Gnatcatcher (*Polioptila californica*) (on-site CSS habitat)	70
California Gnatcatcher (restore CSS habitat)	15
California Gnatcatcher (documented pairs & individuals)	52
California Red-legged Frog (*Rana aurora draytoni*)*	100
Riverside Fairy Shrimp (*Streptocephalus woottonii*)*	100
Two-Striped Garter Snake (*Thamnophis hammondii*)	90-100
Least Bell's Vireo (*Vireo bellii pusillus*)	100
* Percent Preserved standards were not established for most raptor species	

A variety of species designated as federal Category 2 Candidates are not included in Table 2. Policy 2.8 of the RMP requires the onsite preservation of plant and wildlife species recognized as Category 2 Candidates. Unless otherwise specified (e.g., orange-throated whiptail or San Diego horned lizard), the standard for preservation for candidate species is a minimum of 75% of Ranch populations in a Preserve configuration that will ensure their conservation in perpetuity. This standard may be re-evaluated if future studies demonstrate a greater or lesser need for conservation of any resources. Achievement of this standard may be measured by evaluation of the sensitive plant and animal maps (MBA/RECON 1989, 1990), or as updated by any Phase 2 RMP field mapping efforts which include measured areas of the populations to establish the numbers of individuals within those populations.

The Biota Monitoring Plan identifies the following general monitoring techniques.

- Regularly updated aerial photographs to help detect large-scale changes in the biota (e.g., detecting changes in vegetation communities, disturbances such as new trails and roads, etc.);
- Establishment of permanent photo-documentation stations in study plots to detect more fine-grained changes in vegetation communities and composition;
- Field forms that are the same from survey to survey and consistently utilized by personnel;
- Consistent field techniques for measuring biota (e.g., always percent cover or frequency of a dominant plant species in a transect, bird surveys conducted at the same time of year under consistent survey conditions [weather, time of day], live-trapping on transects or grids using the same bait mixture); and

- Measurement of important environmental variables (e.g., local precipitation).

The Biota Monitoring Plan establishes the following schedule (Table 3) for Otay Ranch habitats.

Table 3 ***Schedule for Monitoring Otay Ranch Habitats***

Year	Maritime Succulent Scrub	Wetlands	Grassland	Alkai Meadow	Woodland	Wildlife Corridor
1	×			×	×	
2	×			×		
3	×	×	×	×		
4	×			×	×	×
5	×			×		
6		×	×	×		
7				×	×	×
8	×			×		
9		×	×			
10				×	×	×
11	×					
12		×	×			
13				×	×	×
14	×					
15		×	×			
16	×			×	×	×
17	×					
18		×	×			
19				×	×	×
20	×					
21		×	×			
22				×	×	×
23	×					
24		×	×			
25				×	×	×
26	×					
27		×	×			
28				×	×	×
29	×					
30		×	×			
31				×	×	×
32	×					
33		×	×			
34				×	×	×
35	×					

A.1 California Gnatcatcher and Cactus Wren

The Otay Ranch GDP/SRP and Phase 1 RMP contain the following policy language regarding California Gnatcatcher and Cactus Wren:

> ***Policy:*** The following (Ranch-wide) studies shall be completed by the landowner prior to or concurrent with the first SPA in the Phase 2 RMP. Habitat and Population Studies on California Gnatcatcher and Cactus Wren (ongoing studies over 35-year period). (GDP/SRP Page 359; RMP Policy 1.2)

The purpose of ongoing studies of the coastal California gnatcatcher (*Polioptila californica californica*; CAGN) and the cactus wren (*Campylorhychus brunneicapillus*; CAWR) is to obtain data to be used to assess the long-term viability of these species on the Ranch and to provide additional insight into habitat requirements. A primary focus of these studies is to detect significant changes (versus annual population fluctuations) in the population status of these species.

Data from long-term habitat and population studies will demonstrate if the goals of the RMP are being met for long-term viability of CAGN and CAWR. Monitoring may provide feedback on management activities, resulting in recommendations for changes or improvements in restoration and management strategies. In addition, long term studies aid the scientific community by contributing basic knowledge on the productivity and demography of the species and their relationship to the habitat.

One of the goals of the RMP is to provide long-term protection for CAGN and CAWR. Uniform population surveys of selected study sites will demonstrate if the ranch-wide population numbers of these two species are being maintained within the usual year-to-year fluctuation. The long-term studies will be accomplished through a systematic and regular sampling program. Such a program will entail detailed studies at a selected number of sites rather than large and labor intensive studies of the entire Ranch.

A.1.1 Methodology

Habitat and population studies will be conducted within ten (10) study plots of approximately 100 acres. Five of the plots will be located in areas believed to be of particular significance for gnatcatchers and cactus wrens. Areas for these study plots include Salt Creek Canyon, the Otay River Valley, Poggi Canyon, western San Ysidro Mountains, and southwestern Jamul Mountain. Five additional plots are scattered randomly throughout the Preserve where coastal sage scrub is present.

Each study plot will be surveyed for CAGN and CAWR following the presence/absence survey guidelines of the U.S. Fish and Wildlife Service once a year for five years and then once every three years through the buildout of the Ranch. The USWFS guidelines require three surveys of each 100-acre polygon, at least one week apart, during the breeding season (15 February through 15 July). The surveys should be conducted between January and April to avoid problems in over counting when juveniles are present.

In addition to the surveys of the ten study plots described above, a walkover ranch-wide survey of CAGN/CAWR will be conducted every five years beginning in 2000. The ranch-wide survey will be conducted during the spring and consist of one pass through the entire ranch to estimate ranch-wide population of CAGN and CAWR and to identify new CAGN or CAWN occupation areas, if any. Once every 10 years, a random survey will be undertaken, based on a scope to be prepared by the Preserve Owner/Manager (POM) and reviewed by the City and County. The purpose of the 10-year studies will be to examine population trend analyses.

During future surveys, CAGN and CAWR locations will be recorded on 200'-scale topographic maps, and information about the sighting will be recorded. A data sheet will be used to record the vegetation and site specific description of the CAGN or CAWR location, and will include the following:

- General and specific location of sighting.
- Weather conditions.
- Number, status, sex, and age of individuals.
- Site description: slope, aspect, elevation.
- Vegetation description: type, three dominant species, height, percent cover, percent gap, percent bare ground, percent herbaceous species.
- General comments, including nest location (if found), behavior, presence of cowbirds, etc.

Vegetation and CAGN/CAWR data from the study plots will be compiled and analyzed during the year they are captured. The analyses will include comparisons of current data with data from previous years. A regression analysis will be conducted, with an emphasis on identifying long-term trends rather than short-term phenomena.

In addition to the foregoing analyses, spring surveys for CAGN and CAWR will be conducted on a SPA-by-SPA basis at the time development is proposed within those SPAs. Surveys would be conducted only in those SPAs with a potential for occupation by these species.

A.1.2 1995 Contribution to Ongoing CAGN and CAWR Studies

For 1995, the contribution to ongoing CAGN and CAWR studies includes identification and mapping of the ten, 100-acre study plots for the surveys beginning in 1996 and described above, along with documentation of the previously unpublished data from the Otay Valley Parcel compiled for the NCCP Scientific Review Panel (Appendix F1). The data and mapping points will be evaluated to eliminate points that represent "double-counting" of CAGN or CAWR. These results will provide a conservative estimate of the population size on the Ranch and identify areas of occupation.

A summary report will be prepared which presents the composite, multi-year (1989-1993) population results, including the spatial distribution throughout the Ranch. The numbers derived from the review serve as a baseline for the CAGN and CAWR population size within each parcel, and form the basis for monitoring ongoing potential future "take" of CAGN and CAWR. Future monitoring of ranch-wide or SPA-level populations will also be compared to this baseline.

A.1.3 Research Applications

Habitat studies will be used for analyses of correlations between vegetation characteristics of occupied habitat and the presence of CAGN and/or CAWR. Within each 100-acre study plot, four permanent line-intercept vegetation transects 100 meters long will be established. Permanent transects will be randomly located within the study plot at the onset of the studies. For each line-transect, vegetation data will be compiled each year. Vegetation data to be obtained include percent cover of the vegetation, number of individuals of each dominant shrub (frequency), percent cover of each dominant shrub (dominance), relative density, canopy height, and the species' importance value. In addition, the vegetation information collected for each CAGN and/or CAWR location may be included in some habitat relationship analyses.

A.2 Venal Pool Preservation and Management Plan

The Otay Ranch GDP/SRP and Phase 1 RMP contain the following policy language regarding vernal pool restoration:

> ***Policy:*** Develop a vernal pool restoration plan. (GDP/SRP Page 365; RMP Policies 2.9, 3.7)
>
> ***Policy:*** If feasible, opportunities and plans for mitigation banks shall be developed in conjunction with preparation of wetlands enhancement plans for Otay River Valley and the vernal pool preservation plan in conjunction with the Phase 2 RMP and the first SPA. All revenue generated by wetlands mitigation banks shall be used to fund Preserve activities. (GDP/SRP Page 366; RMP Policies 2.9, 3.7)
>
> ***Policy:*** Investigate the possibility of habitat enhancement and re-introduction of quino checkerspot (*Euphydryas editha quino*) in the Vernal Pool Preserve during the submittal of the Phase 2 RMP. (GDP/SRP Page 366; RMP Policies 2.9, 3.7)

The Phase 1 RMP contains the following implementation requirements and performance standards concerning vernal pool preservation.

Policy: Preservation of a minimum of 95% of the vernal pool habitat on the Ranch supporting vernal pool indicator species (as defined in the vernal pool report). Necessary State and/or federal permits would be obtained in accordance with Section 404 of the Clean Water Act, the U.S. Fish and Wildlife Service, and the California Department of Fish and Game implementing Section 1600 of the California Fish and Game Code. (GDP/SRP Page 365; RMP Policies 2.9, 3.7)

Standards:

- Establish a Vernal Pool Preserve of no less than 330 acres on Otay Mesa south of the Otay River to include all vernal pools identified by the California Department of Fish and Game (Bauder 1986) as J23, J24, J35, J30, and identified sensitive portions of J29.
- Preserve a minimum of 95% of the Otay Ranch distribution of the State- and federally-listed endangered San Diego button-celery (*Eryngium aristulatum var. parishii*), and 100% of the State- and federally-listed Otay Mesa mint (*Pogogyne nudiuscula*) in locations identified in the vernal pool report (Dudek 1992).
- Assure the continued survival of little mousetail (*Myosurus minimus var. apus*) and spreading navarretia (*Navarretia fossalis*) on Otay Ranch through preservation of present known localities for these species on the Ranch plus a combination of enhancement, restoration and management efforts.
- Develop a vernal pool restoration plan to achieve the follow:
    - restore the biota of individual, badly degraded vernal pools;
    - increase diversity and frequency of native biota in all disturbed vernal pools;
    - preserve and enhance vernal pools on K-6 where little mousetail occurs;
    - reduce effect of alien plants;
    - enhance the populations of sensitive species;
    - stabilize soils on mounds and in watershed areas;
    - provide research and educational opportunities.

The SPA One applicant has addressed these policies and standards through the preparation of the Vernal Pool Preservation and Management Plan, Appendix F6 to this document.

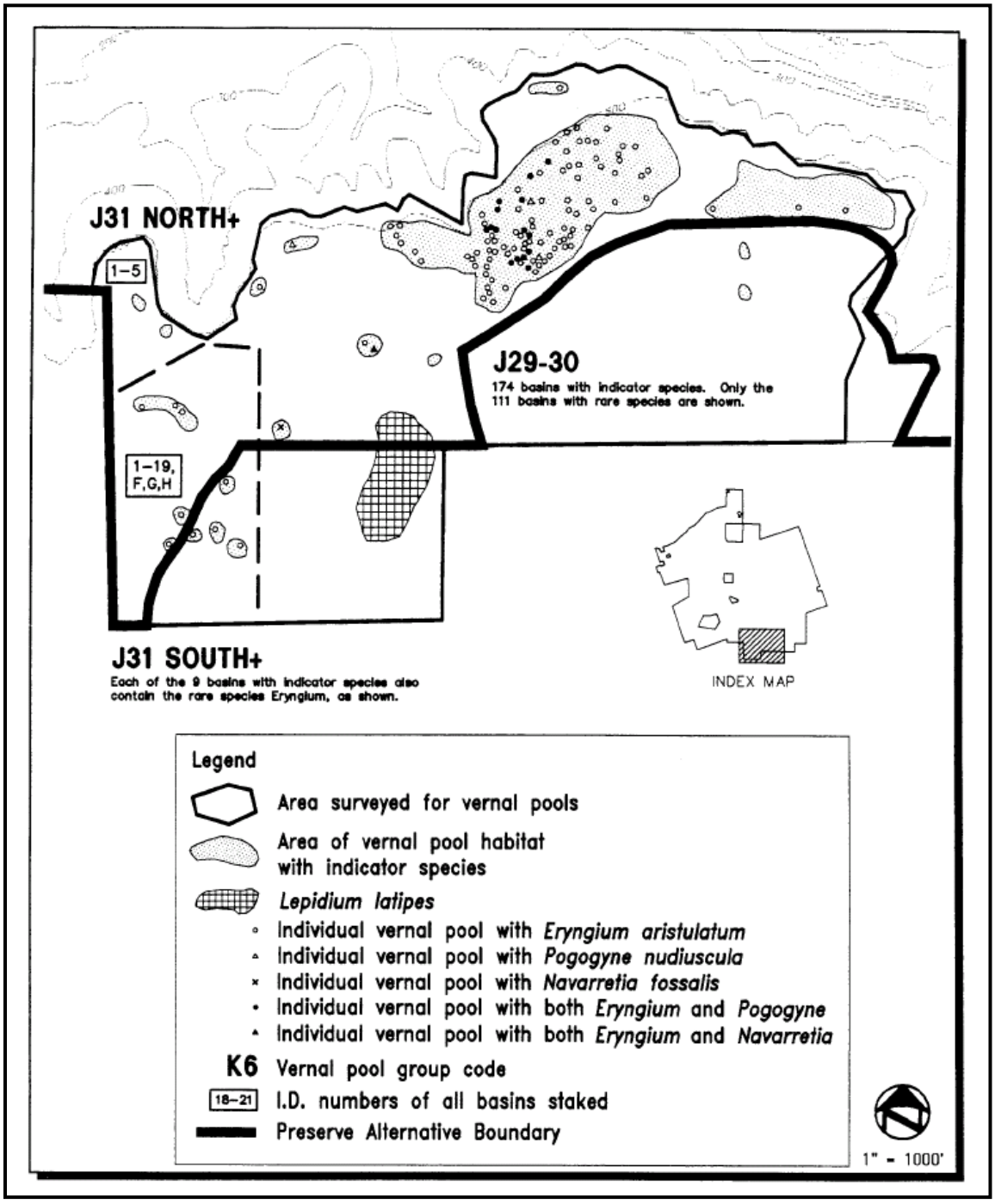
A.2.1 Vernal Pool Preservation Boundaries

In conformance with Policy 2.9 of the Otay Ranch Resource Management Plan, the boundaries of the conceptual Vernal Pool Preserve have been refined and formalized. The preserve must be located on Otay Mesa south of the Otay River, include greater than 330 acres, and include all vernal pools identified by the California Department of Fish and Game (Bauder 1986) as J23, J24, J25, J30, and sensitive portions of J29.

Two alternative designs/configurations for the Vernal Pool Preserve have been developed, one of which will be incorporated into the final draft of the Vernal Pool Preservation and Management Plan. Both alternatives are based on modifications of the boundary contained in the GDP and the RMP.

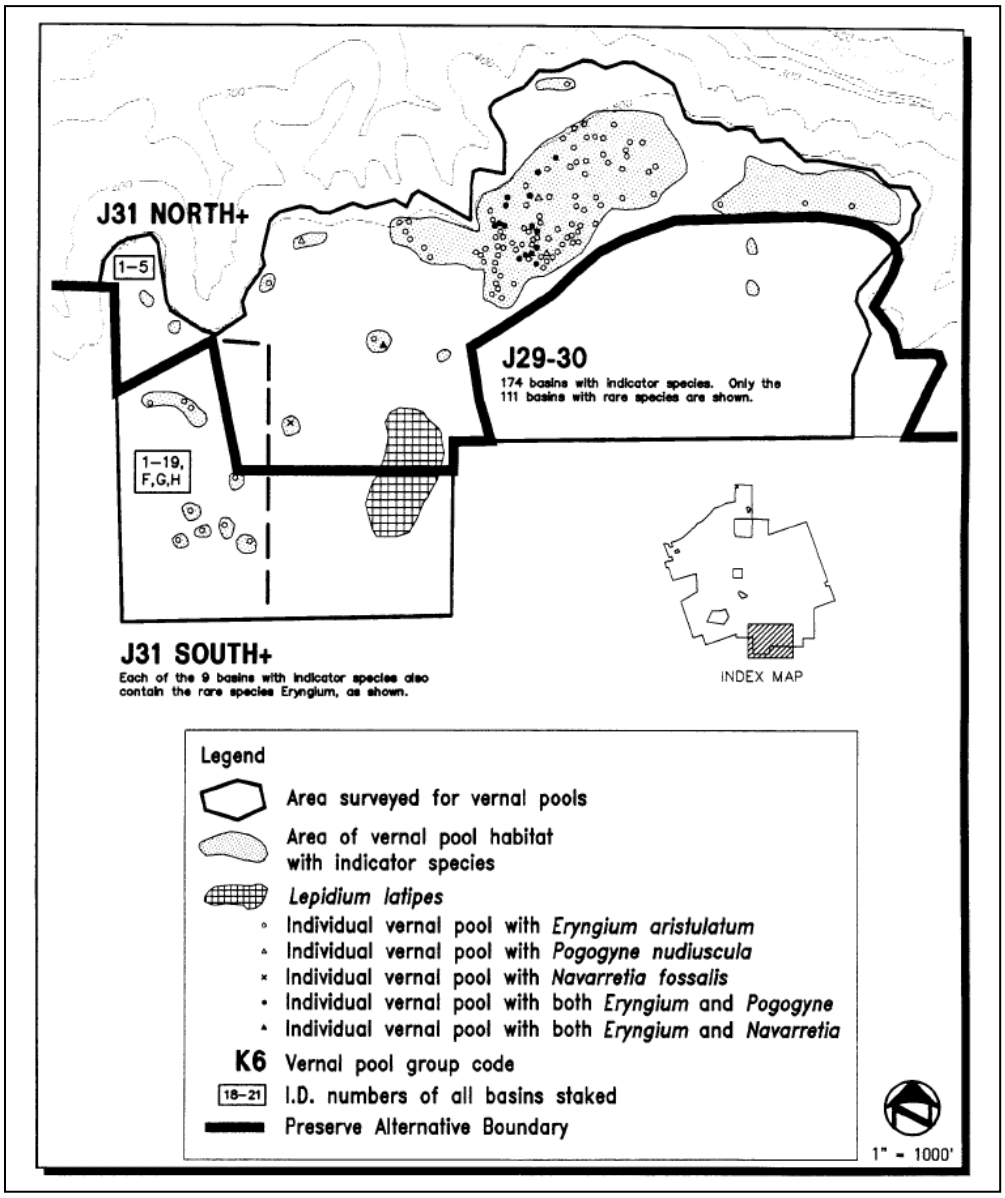
Alternative 1 (Figure 28) includes preserve boundary modifications based solely on the existing cumulative data base. The boundaries of this alternative conform reasonably well with those identified in the Otay Ranch GDP and the RMP, with two minor modifications. The narrow, linear portion of the preserve that formerly extended north-south along the western edge of La Media Road has been eliminated from the Vernal Pool Preserve. The northern portion of an area formerly identified for industrial development has been added to the Vernal Pool Preserve. The linear area was eliminated because following development it would represent a slender peninsula of highly degraded vernal pool habitat between La Media Road and the industrial development that would be highly subject to edge effects and other forms of indirect impacts. Hence, the benefits of protecting the area (i.e., a modest amount of highly degraded vernal pool habitat supporting no sensitive species) would be far outweighed by the cost of its preservation and management. The area added to the Vernal Pool Preserve was included because it was recently documented to support considerable populations of spreading navarretia (*Navarretia fossalis*) and little mousetail (*Myosurus minimus*), both of which are exceedingly rare on the Ranch.

Figure 28 ***Vernal Pool Preserve – Alternative 1***



Alternative 2 (Exhibit 29) includes preserve boundary modifications based on a more pragmatic assessment of the value of including specific areas within the Vernal Pool Preserve, focusing on existing conditions and future management needs. The boundaries of this alternative include three deviations from the GDP/RMP Vernal Pool Preserve. The narrow, linear portion of the preserve that formerly extending north-south along the western edge of La Media Road has been eliminated; the northern portion the industrial development area has been added (with a 50-foot buffer from the nearest pools); and the entire western edge of the conceptual preserve (from the RMP) has been eliminated. In this alternative, highly degraded areas (previously farmed and lacking vernal pool topography) have been excluded because the high cost of management and enhancement would far exceed the value of preservation of the small populations of sensitive plants. Exotic plant removal would require extensive work, and recreation of vernal pool topography may be impossible.

Figure 29 ***Vernal Pool Preserve – Alternative 2***



Under either preserve design, the Vernal Pool Preserve would include over 400 acres of vernal pool landscape, and would capture 100% of the known distribution of Otay Mesa mint, 95% of the Otay Ranch distribution of San Diego button-celery, the only known extant populations of spreading *navarretia* on the Ranch, a large population of little mousetail (the only known locations for this species outside the preserve is K6), the single historical Otay Ranch location for California Orcutt grass, the single known Otay Ranch location of Riverside fairy shrimp, and numerous pools that support San Diego fairy shrimp.

The boundaries of the conceptual Vernal Pool Preserve identified in the RMP and refined above were based on the assumption that SR-125 would extend through Johnson Canyon. However, only two alternatives for SR-125 currently are under consideration (the Brown Field and Brown Field Modified), both of which would effect the boundary of the Vernal Pool Preserve. If either of these alternatives is adopted, the Vernal Pool Preserve should include the degraded vernal pool habitat to the west of the proposed industrial development area (Alternative 1) in order to increase the capture of San Diego button-celery (4 or 5 small populations) and little mousetail (1 population).

A.2.2 Vernal Pool Management

The general management and monitoring duties outlined in the Vernal Pool Preservation and Management Plan will be the responsibility of the Preserve Owner/Manager. These include a variety of tasks such as:

- Inhibiting additional degradation (through fencing, elimination of cattle grazing, and access control);
- Establishing protocols for the use of pools for research and education (e.g., who is permitted and what activities are allowed);
- Development of specific monitoring strategies for determining changes in flora and fauna of the pools (e.g., when, why, who); and
- A minimal amount of general enhancement activities (e.g., trash removal).

A.2.3 Vernal Pool Impacts

The Otay Ranch property owner(s) will be responsible for the active restoration and enhancement of vernal pool habitat only in association with impacts to vernal pools. The Final Program EIR for Otay Ranch (1992) indicated that a total of 14 acres of vernal pool habitat would be lost as a result of implementation of the Otay Ranch GDP. The EIR indicated that acreage of vernal pool habitat represents the circumscribed concentrations of vernal pools and the intervening Mima mound topography, and that this area is substantially greater than the vernal pool surface area. Because the circumscribed areas include the Mima mound topography for each potentially affected area, the 14-acre impact is interpreted to reflect the total amount of vernal pool watershed affected.

Due to the recent Brewster Decision made on October 13, 2006, regarding impacts to vernal pool species, any impacts to the seven vernal pool species (San Diego & Riverside fairy shrimp, Otay mesa mint, CA Orcutt grass, San Diego button celery, San Diego mesa mint,

& Prostrate navarretia), shall require consultation with the U.S. Fish and Wildlife Service per Section 7 of the ESA.

A.2.4 Vernal Pool Mitigation Bank Opportunities

Restoration, enhancement, management, and research opportunities within the Otay Ranch Vernal Pool Preserve are likely to provide more mitigation opportunities than will be required to mitigate impacts associated with implementation of the Otay Ranch GDP. Implementation of enhancement and restoration activities beyond those necessary to mitigate for direct impacts of development within Otay Ranch may be viewed as a contribution to a vernal pool "mitigation bank."

Restoration opportunities, above and beyond those needed for mitigation for impacts associated with the Otay Ranch GDP shall be available as a "mitigation bank" for impacts to vernal pools that occur outside of Otay Ranch (as permitted by the Otay Ranch GDP, Page 366) and administered by the Preserve Owner/Manager. Mitigation for these impacts will be determined based on individual permit requirements negotiated between individual applicants and the resource agencies on a case-by-case basis. Potential opportunities for this type of mitigation are presented below.

Mitigation bank opportunities include the following:

- Reconfiguration of pools disturbed by roads.
- Removal of exotic plant species.
- Installation of permanent fencing.
- Funding of research efforts.
- Revegetation of Mima mounds with coastal sage scrub and/or native grassland to reduce the amount of non-native vegetation in the Vernal Pool Preserve.
- Topographic reconfiguration and floral restoration of disturbed pools in the disturbed "circle" in J25.
- Increase the number of pools with *Pogogyne nudiuscula* on J23-24, J25, and J29-30 through seeding trials.
- Funding of research for a variety of projects:
    - studies of vernal pool hydrology within the Vernal Pool Preserve
    - studies on the effect of weed removal (gradual vs. abrupt)
    - taxonomic studies on species of unresolved systematic position
    - ecological and phenological studies on listed and candidate plant species
    - ecological studies on fairy shrimp (and other invertebrates)
    - ecological studies on pollinators of sensitive vernal pool plants
    - effects of grazing on vernal pools
- Design and implement a biota monitoring program for determining changes in flora and fauna of the pools. (New opportunity not included in the Biota Monitoring Program.)
- Provision of funds to identify and coordinate with all easement holders, landowners, lease holders, government agencies, etc., that may obtain access to

Otay Ranch. Inform these agencies of the sensitivity of vernal pool areas and monitor all activities through or within vernal pool habitat.

- Restoration of road pools in J23-24 and J25.
- Reintroduction of quino checkerspot (*Euphydryas editha quino*) into the Vernal Pool Preserve.
- Contribution to signage and interpretive programs.

A.2.5 Management Recommendations

Each pool and its immediate surrounding watershed (outside of the Vernal Pool Preserve and vulnerable to degradation) should be identified with brightly colored flossing. Pools that support state and/or federally-listed or candidate species should be fenced. Where pools occur in close proximity, the entire complex should be flagged or fenced.

A.2.5.a *Otay Mesa Series*

The vast majority of the vernal pools in the Otay Mesa Series are included within the Vernal Pool Preserve. This area should receive management efforts consistent with the remainder of the preserve. The most important management features are the inhibition of undesirable access by vehicles, removal of cattle grazing, and monitoring populations of rare species. Based on input from the POM, fencing of the perimeter of the series may be necessary to achieve these goals. At a minimum, all vehicles should be prohibited access except for the perimeter of the mesas where there are existing dirt roads. In addition, starting in Spring 1996, cattle should be excluded according to the schedule and criteria identified below.

A.2.5.b *Otay Valley Series*

With the exception of the K2 complex, all of the pools in the Otay Valley Series will be included within the Preserve. Because no sensitive species have been reported from this series, management efforts should be directed at maintaining the topographic integrity of the basins and mounds. Prior to construction activities on immediately adjacent areas, these complexes should be fenced to inhibit inadvertent encroachment, and construction crews should receive direction to avoid these areas.

A.2.5.c *Poggi Canyon Series*

Pools of the Poggi Canyon Series will be eliminated by development associated with SPA One; hence, management recommendations are inappropriate.

A.2.5.d *Lower Otay Lake - South Series*

The K5, K10+, and K11+ complexes are entirely offsite of Otay Ranch. Prior to development of Otay Ranch in the immediate vicinity, these complexes should be fenced to avoid inadvertent encroachment by construction equipment. The portions of the K12+, K13+, and K14+ complexes onsite potentially will be lost to development; hence, management recommendations are inappropriate. None of the latter three pool complexes support sensitive species.

A.2.5.e *Lower Otay Lake - North Series*

Based on the approved GDP, the entire Lower Otay Lake - North Series (i.e., K6, K8+, and K9+) would be lost to development; hence management efforts are inappropriate for all but the K6 complex. This complex historically supported little mousetail, although it is highly degraded at present, and supports no other sensitive species and few vernal pool indicators. Nonetheless, the topographic integrity of the Mima mounds has not been severely compromised by this disturbance. Because intensive grazing is suspected to have been an important factor in the degradation of these pools, it is recommended that a multiple-year (4-5 years) cattle exclusion study be conducted on portions of the mesa to determine whether the K6 pools have the ability to recover and whether incipient populations of vernal pool indicators and/or sensitive species are present but have been suppressed by grazing. These data shall be used to determine whether fragments of the K6 complex should be preserved or whether the preservation of these fragments is more costly in terms of management than the benefits of their preservation.

A.2.5.f *Lower Proctor Valley Series*

Pools of the R1 series are vulnerable due to their proximity to Proctor Valley Road. However, nearly all of these pools are offsite. It is recommended that the pools in this series be fenced to inhibit degradation from off-road vehicles, trash dumping, and road maintenance activities. The POM should coordinate with County of San Diego road crews to ensure that they are aware of the sensitive nature of this area and that inadvertent impacts should be avoided.

A.2.5.g *Upper Proctor Valley Series*

Pools of the R3+ series are also vulnerable due to their proximity to Proctor Valley Road. It is recommended that the three vernal pools in this series be fenced to inhibit degradation from off-road vehicles, trash dumping, and road maintenance activities. The POM should coordinate with the County of San Diego road crews to ensure that they are aware of the sensitive nature of this area and that inadvertent impacts may constitute a violation of the Federal Endangered Species Act because of the presence of San Diego button-celery. If deemed appropriate by the POM and the County of San Diego, these pools could be included in the Vernal Pool Preserve as a "satellite" preserve unit. Under this scenario, these pools would receive protection, management, monitoring, and enhancement consistent with other pools within the Vernal Pool Preserve south of the Otay River.

A.3 Wetland/Riparian Habitats

Policy 2.10 of the RMP addresses preservation and enhancement of wetlands. The standards for preservation of wetlands, including floodplain scrub, southern willow scrub, and aquatic/freshwater marsh, are as follows:

- No net loss of in-kind wetland quality or quantity in accordance with the standards of the U.S. Army Corps of Engineers (COE), implementing Section 404 of the Clean Water Act, the USFWS and CDFG implementing Section 1600 of the California Fish and Game Code.
- If feasible, opportunities and plans for mitigation banks shall be developed in conjunction with preparation of wetlands enhancement plans for the Otay River

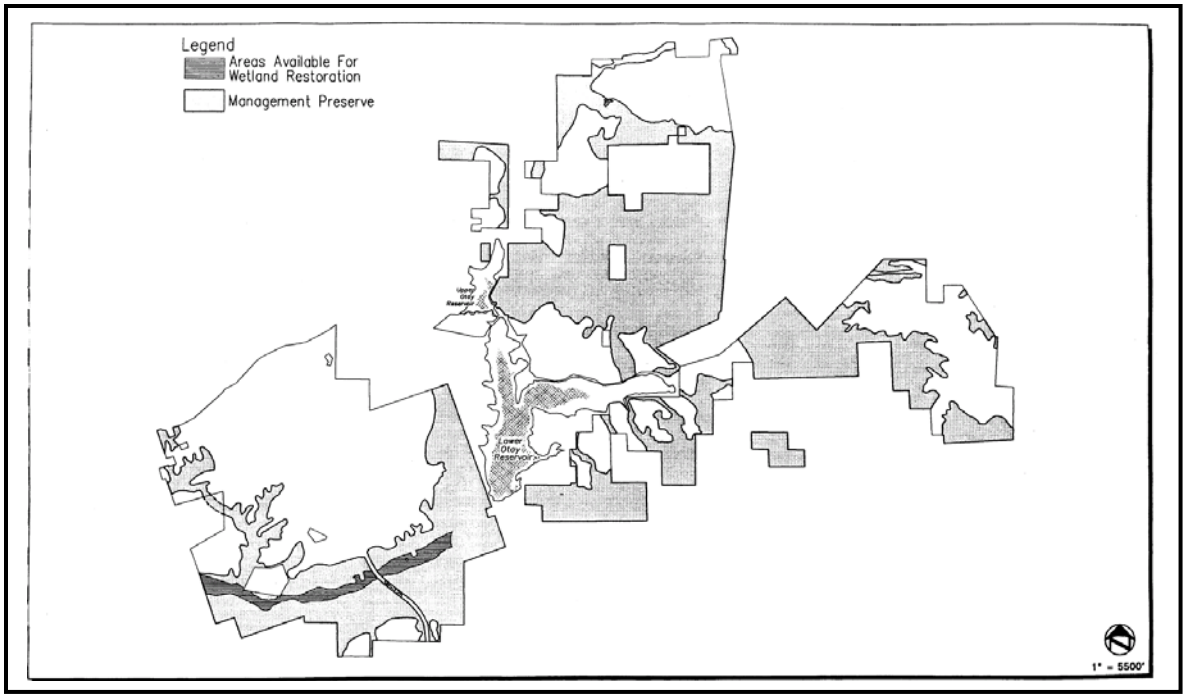
Valley and the Vernal Pool Preservation and Management Plan in conjunction with the Phase 2 RMP and the first SPA. All revenue generated by wetland mitigation banks shall be used to fund Preserve activities.

To achieve the standards for preservation and enhancement of wetlands, the RMP guidelines are as follows:

- Include at least 90% of identified wetlands within the Preserve.
- Where feasible, preserve wetlands not included within the Preserve within non-preserve open space.
- Conduct a wetland delineation for each SPA development using the methodology appropriate for the permit or approval being sought.
- Compensate for wetlands outside of the Preserve by wetland creation, restoration, and enhancement within the Preserve, primarily in the Otay River Valley.
- When and where feasible, wetland creation, restoration, and enhancement within the Preserve shall be completed prior to actual habitat disturbance for which these activities are considered mitigation.

The implementation guidelines of the RMP (Section 4.3.1 and Figure 30) specify locations for potential wetland/riparian habitat creation, restoration, and enhancement. These activities will be concentrated in the Otay River Valley in areas that currently support disturbed or degraded wetlands, including tamarisk/mule fat scrub, mule fat scrub, tamarisk scrub, and baccharis scrub.

Figure 30 Areas Available for Wetland Restoration



A.4 Alkali Meadow

The approved plan requires that the Preserve include 72% of existing alkali meadow. The EIR Findings of Fact state:

> "Impacts shall be substantially lessened through placement and design features (i.e., road location and infrastructure design) and application of a ratio as defined by the appropriate public agency, however, no less than 1:1 based on habitat type and quality and whether pre-establishment of in-kind habitat has occurred. Development shall not occur until compensation has been approved by California Department of Fish and Game through the Streambed Alteration Agreement and/or Corps of Engineers 404 permit process, as required in accordance with their no net loss statement.
>
> Potential indirect impacts shall be mitigated by providing a minimum 100-foot width buffer for all alkali meadow habitat. No development or landscaping shall be allowed within buffer areas. Impacts to alkali meadow from hydrological alterations (including potential displacement of native habitat with exotic and wetland species) shall be mitigated as described herein. The water runoff from surrounding development shall be diverted and controlled to retain the same amount and seasonality of water input existing before development. A study shall be required at the SPA level of analysis to determine existing hydrological conditions of streams containing alkali meadow and what hydrological changes will occur to these streams after development. The results of these studies shall be used to engineer storm drain development to achieve pre-impact hydrological conditions."

A.5 Woodlands

Policy 2.4 of the RMP stipulates preservation of the following types of woodland habitats: southern interior cypress forest, coast live oak woodland, oak riparian forest, riparian woodland, and sycamore alluvial woodland. The standard of preservation is 100%, and where it is infeasible to include these woodlands in the Preserve, they shall be included in non-preserve open space.

A.6 Wildlife Corridors

A wildlife corridor study of the Otay Ranch was conducted by Ogden Environmental and Energy Services, Inc. in 1992 (Ogden 1992). The corridor study concentrated on five focal species: bobcat (*Lynx rufus*), mule deer (*Odocoileus hemionus*), mountain lion (*Felis concolor*), California gnatcatcher, and cactus wren. Ogden also distinguished between regional and local wildlife corridors:

> "Regional corridors link two or more large areas of open space and are necessary to maintain demographic and genetic exchange between wildlife populations residing within these geographically disjunct areas. Local corridors allow resident animals access to necessary resources (e.g., water, food, cover, or den sites) within a large habitat patch and they may function as secondary connections to the regional corridor system." (pg 1-1)

Based on the Ogden study, several regional and major local wildlife corridors were identified on all three parcels of the Otay Ranch. Several of these corridors also occur on, or cross, other public and private ownerships.

Regional and local wildlife corridors should be monitored using the same field methodology used in the Ogden study. The methodology utilizes accepted field techniques for detecting signs of wildlife species, including tracks, scat, and, rarely, visual contact. Track surveys may be conducted using several methods: (1) finely raked sand or dirt; (2) graphite powdered cards; (3) layers of lime chalk; (4) soot-coated aluminum scent stations; and (5) combinations of these methods. Infrared triggered cameras also can be used to photograph passing animals.

Monitoring sites should be established in areas where there may be future constraints on wildlife movement because of a reduction of habitat (e.g., a narrowing of habitat links), potential physical barriers (e.g., roadways), and potential edge effects from development (noise and lighting). It is reasonable to assume that if animals use relatively constrained wildlife corridors in the Preserve, that they also will use less constrained areas (e.g, the Otay River Valley portion of the Preserve).

Based on the results of the Ogden study, recommended areas for monitoring wildlife corridors include:

- The confluence of Wolf and Poggi canyons
- Otay Valley Road where Wolf Canyon meets the Otay River Valley
- The SR 125 crossing of the Otay River Valley
- The confluence of O'Neal Canyon and Otay River
- Buschalaugh Cove-San Ysidro Mountains
- Jamul Mountains-Dulzura Creek at Otay Lakes Road
- Proctor Valley Road near the City of Chula Vista boundary
- Little Cedar Canyon at Otay Lakes Road
- Cedar Canyon at Otay Lakes Road

Sites should be monitored quarterly during survey years to establish seasonal use of wildlife corridors. Each site should be monitored every three years.

B. Cultural and Paleontological Resource Elements

The Otay Ranch GDP/SRP and Phase 1 RMP contain the following policy language regarding cultural resource studies:

> **Policy:** In conjunction with the first SPA in the Otay Valley Parcel, complete cultural resource studies to assess cultural resources throughout the Otay Valley Parcel. (GDP/SRP Page 359; RMP Policy 1.314)

A systematic survey of the cultural resources in the Otay Valley Parcel has been completed as part of the Phase 2 RMP. The results of the survey are presented in Appendix F5 of Phase 2 RMP, "Otay Valley Parcel Cultural Resource Systematic Survey," (Brian Smith and Associates, 1995).

C. Public Use Elements

C.1 Research and Education

The Preserve presents itself with significant new opportunities for onsite research for teaching South County residents and visitors to understand, enjoy, and protect our natural heritage. The Preserve will provide a unique and multi-faceted living laboratory for research related to:

- habitat, paleontological, and cultural resource protection and management;
- experimental approaches to enhancing and restoring degraded habitats;
- understanding species and habitat needs and conditions that adversely affect sensitive plant and animal species.

The Preserve will also provide carefully controlled opportunities, consistent with resource protection needs, for the public to learn about and appreciate the natural and cultural diversity of the area, including:

- its biological diversity and cultural heritage;
- the inter-relationships between sensitive species and natural habitats;
- the opportunity to observe biological and cultural resources in their natural setting;
- the importance of preservation of natural areas and understanding challenges to the survival of remaining natural ecosystems.

The role envisioned for the Preserve will be to provide public benefits typically associated with great museums; however, the Preserve will be more than a museum. Museums present artificial depictions of natural systems and cultural artifacts because they no longer exist in nature or because they are too remote or sensitive for public visitation. The Preserve will feature functioning habitats and cultural resource exhibits in their natural settings. Not all parts of the Preserve will be suited to public access and use. But through the careful siting of trails, an interpretive center, botanical gardens, and research projects, the Preserve offers an opportunity to create a truly unique public educational and research resource.

The Preserve will differ considerably from traditional museums. It will be open and exposed, with "exhibits" featuring expansive areas where plants and animals interact in a natural manner, and where visitors can experience natural ecological systems and cultural resources in protected natural settings. Because it will be an enjoyable learning experience, people will return often and the educational values of the Preserve will be maximized. The Preserve will bestow environmental and educational benefits upon the South County for decades to come as area residents and visitors enjoy the Preserve and its educational programs. Clearly, the Preserve will contribute to a growing public awareness and appreciation of the need for careful stewardship of our remaining natural areas. Opportunities to effectively impart these lessons are rare and should not be missed.

C.2 Recreation

Otay Ranch possesses significant potential for regional recreation opportunities. The large areas of open space and prominent visual features, such as Otay River Valley, Otay Lakes, and the surrounding mountains (Jamul, San Ysidro, San Miguel), endow the area with a wide range of aesthetic values. The presence of Otay Lakes and its surrounding extensive open space provide considerable recreation opportunities, including boating, fishing, biking, hiking, picnicking, and camping. The close proximity of Otay Ranch to San Diego and its metropolitan population results in considerable recreation demand. The Otay River Valley and natural areas in the Jamul and San Ysidro mountains are particularly attractive, and these areas have been identified by local and regional agencies as potential recreation sites. Planning for the Preserve must consider the fact that increased recreation is likely to occur in the project area. Educational and interpretive opportunities in a recreational context may greatly benefit the overall program.

D. Fire Management Element

As discussed in Section II, given the fire-prone environment of the Preserve, fire-related effects are expected to be recurring in Otay Ranch, as they are throughout southern California. The overall goals for fire management are to protect lives and property, and to maintain natural ecosystems in the Preserve.

There are concerns for increased erosion and reduced access after recent wildfires, invasion of nonnative plants in disturbed areas, and conversion of chaparral to other vegetation types in stands that burned twice in the past decade. Increased coordination among agencies and with adjacent landowners and communities can enhance the likelihood of sustaining long-term ecosystem health and processes in the Preserve in these fire-adapted lands.

The Otay Ranch GDP/SRP and Phase 1 RMP include the following policies regarding fire management:

Policy: Fire roads shall be permitted within the Preserve only where absolutely necessary to assure public safety and control wildfires that may damage biological resources (GDP/SRP Page 382; RMP Policy 6.7).

Policy: Ecologically necessary controlled burning may be permitted within the Preserve (GDP/SRP Page 383; RMP Policy 6.8).

Standard: Where and when it is deemed appropriate for the enhancement of biological resources by the POM, and subject to review by the County and the City with advice from the Wildlife Agencies, controlled burning shall be conducted within the Preserve.

As discussed in Phase 2 RMP Appendix F7, Range Management Plan for Otay Ranch, controlled burning is an important management tool. It is described as systematically planned burning of selected land areas when weather and vegetation favor particular method and intensity to accomplish a particular goal. The major benefit of burning is the removal of old, dead material and increasing the palatability of new forage, release of plant nutrients into the soil, rejuvenation of woody plants, and increased wildlife use.

Specific controlled burning programs should be developed prior to any controlled burns. A specific burning program would need to be developed for each potential burn site because local conditions vary. A burning program should include the following elements:

- Purpose of the burn
- Where to burn
- What to burn (size, particular habitat)
- When to burn (season)
- Environmental constraints (wind, fuel, moisture)
- A systematic plan

IV. OPERATIONS AND MAINTENANCE SUMMARY

A. Staffing

Many of the policies, recommendations and implementation measures listed in the Otay Ranch GDP/SRP, Phases 1 and 2 RMPs, and Phase 2 RMP appendices, as consolidated in this document, require continued coordination between the County and the City. Coordination is completed with regular POM Staff meetings. Currently, a Principal and Associate Planner from the Planning Department represent the City as POM Staff and two Land Use Environmental Group (LUEG) Program Managers from the Departments of Parks and Recreation and Planning and Land Use along with a Land Use/Environmental Planner represent the County as POM Staff.

A full-time County Park Attendant is assigned to manage Preserve land conveyed to the POM. Management tasks include:

Future Planning

- Attends site visits with POM Staff and Applicants prior to land being conveyed to the POM to provide input on the condition of the land, access to the property, and fencing requirements

Maintenance

- Removes trimmings, rubbish, debris, and other solid waste
- Removes and controls exotic plant species, i.e. castor bean, tamarisk, and arundo cane
- Maintains existing truck trails

Security

- Enforces “no trespassing” rules
  - Patrols access routes
  - Controls access
  - Prohibits off-road traffic
  - Maintains fences and gates
- Curtails activities that degrades resources, i.e. illegal dumping, shooting

V. COORDINATION WITH OTHER AGENCIES

In 1994, a Memorandum of Understanding (MOU) was signed by the BLM, County, City of San Diego, U.S. Fish and Wildlife Service, California Department of Fish and Game, and SANDAG as an agreement to manage lands consistent with the Natural Community Conservation Planning (NCCP) program. This agreement recognized that all these agencies were actively involved in multiple species conservation planning and land management. While acknowledging that each agency will manage in accordance with their own policies, the MOU established a partnership and laid the groundwork for cooperative planning and management.

Since that time, these agencies have moved forward to acquire land for habitat conservation. The Otay Ranch area is an example of cooperative inter-agency preserve planning, and there are opportunities to organize preserve land ownership and management to maximize efficiency.

Four other public agencies own land within and adjacent to the Preserve area: Bureau of Land Management (BLM), U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Game (DFG), and the City of San Diego. The City of San Diego ownership is part of Lower Otay Lake. The land around the lake is part of the City of San Diego's cornerstone lands for the MSCP; this area has not had a conservation easement placed on it yet. The City of San Diego Water Department is protecting the area around the lake as a priority for water quality, and the Lakes Program Manager has the lead. The POM will continue to coordinate with these agencies regarding the management and maintenance of the Preserve.

APPENDIX A

County Board of Supervisors and Chula Vista City Council Actions since the Adoption of the Otay Ranch GDP/SRP

Because the Otay Ranch GDP/SRP and the RMPs are regulatory documents adopted jointly by the Board and the City Council, any amendments which affect both jurisdictions and/or the goals and intent of the Preserve must be approved by both the County and City in order for the amendment to take effect.

On March 6, 1996, the Board: (1) entered into a Joint Exercise of Powers Agreement (JEPA) with the City for the ownership and management of the Otay Ranch Preserve through the establishment of the POM; (2) approved the Otay Ranch Preserve Financing Plan; (3) approved a portion of Phase 2 RMP regarding the Preserve Conveyance Plan which set forth the processing for conveying preserve lands associated with Otay Ranch SPA One only. No other village or SPA could be approved until the Conveyance Plan was amended by both the County and the City; and (4) approved the Otay Ranch Overall Design Plan.

On June 4, 1996, the City Council adopted Phase 2 RMP. The Plan mirrored provisions approved by the Board on March 6, 1996, including: (1) Requiring the conveyance of open space in fee title at the recordation of each Final Map; (2) Requiring that the subdivider execute a maintenance agreement committing the subdivider to maintain the conveyance parcel in its current and natural state until the POM can assume maintenance responsibilities; (3) Directing that an in-lieu fee program be investigated as an alternative to land conveyance; and (4) Restricting applicability of the Conveyance Plan to SPA One, until further amendments to the Plan are incorporated and approved by the County and City. However, the Phase 2 RMP approved by the City also included provisions different from the version approved by the Board, including: (1) The use of easements as an optional open space conveyance method; (2) Preparation of specific language regarding in-lieu fees; and (3) Replacement of the Preserve Conveyance Plan Map . The Board has not taken action on Items 1 and 2 which affects the goals and intent of the Preserve. Therefore, these amendments are not considered effective changes to the Phase 2 RMP.

In March 1997, the City annexed Villages 1 and 5 (SPA One) and thereby gained land use jurisdiction over these villages.

On October 22, 1997, the Board adopted the Multiple Species Conservation Program (MSCP) Subarea Plan. Otay Ranch is within the South County Segment of the MSCP. Adjustments were made to Otay Ranch development patterns resulting from the County MSCP Subarea Plan negotiations with the Wildlife Agencies and the original master property owner, the Baldwin Company, coordinating development of Otay Ranch.

On June 9, 1998, the City Council approved an amendment to Phase 2 RMP expanding the original Preserve Conveyance Plan Map to include additional parcels. This amendment did not become effective until the Board took action to conform to the revised Preserve Conveyance Plan Map adopted by the City in 1998 on August 7, 2002.

On August 7, 2002, the Board amended the Preserve Conveyance Plan Map in the Phase 2 RMP to conform to the Preserve Conveyance Plan Map as adopted by the City in 1998.

On May 13, 2003, the City Council adopted the City's Final MSCP Subarea Plan. The Subarea Plan provides conservation of covered species and their associated habitats. Specifically, the Plan includes: 1) A Quino checkerspot butterfly Recovery Component sufficient to warrant coverage for the species and making it the "86th" covered species under the City's requested incidental take permit; 2) additional conservation on a number of properties increasing the City's overall Preserve acreage; and 3) implementing ordinances and an implementing agreement to provide further assurance that the Subarea Plan will be implemented as described in the Plan.

On December 13, 2005, the City Council adopted their General Plan Update which included amendments to the Otay Ranch GDP and Phase 2 RMP. GDP amendments included changes to (1) the GDP Map; (2) Town Center Designation; (3) Town Center Arterial; (4) Bus Rapid Transit System and Alignment; (5) Mobility/Circulation Element Revision; (6) Regional Technology Park; (7) Open Space-Active Recreation Land Use (Otay Valley District); (9) RMP Boundary Amendment at Village 9, University (Village 10) and Village 11; (10) Growth Management – Delete Annual Report Requirement; Recognizes University Study Area; (11) Villages 1, 2 (and Two West), 3 (includes former Planning Area 18 b), 4, 7, 8, 9 – University Town Center/Village, and 11; (12) University Campus; (13) and Planning Areas 12 (Eastern Urban Center and Freeway Commercial), 18, 20 (Otay Valley). Boundary amendments to the Phase 2 RMP Preserve Conveyance Plan Map redefined the eastern and southern boundaries of Villages 9, 10 and 11 and included approximately 52 acres of developable University land in the southeastern portion of Salt Creek to be consistent with the City's adopted MSCP Subarea Plan.

On May 23, 2006, the City Council amended the Otay Ranch GDP and Phase 1 and 2 RMPs initiated by the Otay Ranch Company. The amendments included the elimination of the Preserve Conveyance Plan in order to allow Villages Two, Three and all subsequent villages to convey any Otay Ranch Preserve lands in satisfaction of each village's conveyance obligation and to eliminate the Coastal Sage Scrub Restoration Requirement. These amendments to the Otay Ranch GDP/SRP and Phase 1 and 2 RMPs are not considered effective until the Board takes the same action.

Also on May 23, 2006, the City Council approved the following amendments to the Plans: (1) Elimination of three development areas totaling approximately 139 acres at the east end of Village 13, and thereby convert the land to open space preserve; (2) Elimination of the development designation from approximately 98 acres at the southwest edge of Village 15, and thereby convert the land to open space preserve; (3) Expansion of the development area by approximately 62 acres within Village one, Village One West; (4) Refinement of the Otay Ranch GDP development/Preserve boundaries within Wolf Canyon to accommodate proposed grading limits for Village Two and include additional lands in the Preserve within the northern portion of Wolf Canyon; (5) Deletion of the preserve areas in Village Two West; and (6) Deletion of the avian corridor between Village Two West and Wolf Canyon. The Board has only adopted Items 1 through 3. Item 4 and 5 are not considered effective until the Board takes the same action.

On December 5, 2007, the Board voted on consent to amend the Otay Ranch SRP and Phase 1 and 2 RMPs to mirror actions taken by the City Council on May 23, 2006. This General Plan Amendment was initiated by the Otay Ranch Company. The amendments included the elimination of the Preserve Conveyance Plan in order to allow Villages Two, Three and all subsequent villages to convey any Otay Ranch Preserve lands in satisfaction of each village's conveyance obligation and to eliminate the Coastal Sage Scrub Restoration Requirement.

APPENDIX B

JOINT POWERS AGREEMENT
BETWEEN THE
CITY OF CHULA VISTA
AND THE COUNTY OF SAN DIEGO
FOR THE PLANNING,
OPERATION AND MAINTENANCE
OF THE
OTAY RANCH OPEN SPACE PRESERVE